# Phase IV As-Built Construction and Final Inspection Report

Sediment Portion of the Former Everett Staging Yard Disposal Site

One Broadway, Everett, Massachusetts

Release Tracking Number (RTN) 3-13341

## Prepared by:

AMEC Massachusetts, Inc.
Chelmsford, MA 01824

**January 2019**

Project No. 3651170065

© Amec Foster Wheeler 2018.

# PHASE IV AS-BUILT CONSTRUCTION AND FINAL INSPECTION REPORT

## Sediment Portion of the Former Everett Staging Yard Disposal Site

## One Broadway, Everett, Massachusetts

**Submitted by:**

AMEC Massachusetts, Inc.
271 Mill Road, 3rd Floor
Chelmsford, MA 01824

Project No. 3651170065

**January 2019**

**Prepared and Reviewed by:**

John Rice
Geologist

Matt Grove, Ph.D.
Licensed Site Professional #9932

Danielle Ahern, PE
Engineer of Record

## TABLE OF CONTENTS

**1.0 INTRODUCTION ..... 1**
1.1 Purpose and Scope ..... 1
1.2 Report Organization ..... 1
**2.0 BACKGROUND ..... 2**
2.1 Site Location and Locus Map ..... 2
2.2 Regulatory History and Status ..... 2
2.3 Roles and Responsibilities of the Parties Involved in Implementing the CRA ..... 4
2.4 Summary of CRA Activities ..... 4
2.5 Permitting ..... 5
**3.0 PHASE IV REMEDY IMPLEMENTATION AND AS-BUILT CONDITIONS ..... 7**
3.1 Mobilization and Site Preparation ..... 7
3.2 Environmental Controls and Monitoring ..... 8
3.3 Barge Demolition ..... 9
3.4 Debris Removal ..... 10
3.5 Dredging ..... 10
3.5.1 General Sediment Dredging ..... 10
3.5.2 Asbestos-Impacted Sediment Dredging ..... 11
3.6 Sediment Processing, Water Treatment and Off-Site Disposal ..... 12
3.6.1 Sediment Processing ..... 12
3.6.2 Water Treatment ..... 13
3.6.3 Off-Site Disposal ..... 13
3.7 Capping ..... 14
3.7.1 Cap Materials ..... 15
3.7.2 Sand Cap (Type A) Installation ..... 16
3.7.3 Navigation Area Cap (Type B) Installation ..... 16
3.7.4 Tidal Flat Cap (Type C) Installation ..... 16
3.7.5 Cell C13 Cap Modification ..... 17
3.7.6 Blended Sand Cap (Type MA) Installation ..... 18
3.7.7 Outlet Protection Structure ..... 18
**4.0 FINAL INSPECTION ..... 19**
**5.0 REFERENCES ..... 20**

## TABLES

Table 3-1 Daily Turbidity Readings
Table 3-2 Turbidity Reading Protocol for Opening the Turbidity Curtain
Table 3-3 Water Treatment System Effluent Data Summary
Table 3-4 Cap Material Specifications

## FIGURES


| | |
|---|---|
| Figure 1-1 | Site Location Map |
| Figure 1-2 | Pre-Remediation Site Plan |
| Figure 3-1 | Sediment Processing Area (95 Behen Street) |
| Figure 3-2 | Piling Locations |
| Figure 3-3 | Sediment Dredge Cell Layout |
| Figure 3-4 | Water Treatment System Schematic |
| Figure 3-5 | Water Treatment System Layout |
| Figure 3-6 | Pre-Characterization Sample Locations |
| Figure 3-7 | Sediment Capping Cell Layout |


## APPENDICES


| | |
|---|---|
| Appendix A | Selected Photographs |
| Appendix B | Barge Demolition Asbestos Documentation |
| Appendix C | Remediation Waste Documentation |
| Appendix D | Debris Survey |
| Appendix E | Record Drawings |
| Appendix F | Asbestos-Impacted Sediment Dredging Documentation |
| Appendix G | Water Treatment System Analytical Data |
| Appendix H | Sediment Pre-Characterization Data |
| Appendix I | Laboratory Test Results of Cap Material |

# 1.0 INTRODUCTION

## 1.1 Purpose and Scope

This Phase IV As-Built Construction and Final Inspection Report (Phase IV As-Built Report) has been prepared by AMEC Massachusetts Inc. (AMEC) for the sediment portion of the Former Everett Staging Yard Disposal Site (the Disposal Site) located in Everett and Boston (**Figure 1-1**). The Disposal Site, which includes both uplands and a portion of an embayment of the Mystic River (**Figure 1-2**), is identified by Release Tracking Number (RTN) 3-13341. This Phase IV As-Built Report was completed for Wynn MA, LLC and Everett Property, LLC (collectively, Wynn) the current owners of the property on which the Disposal Site is located.

The Massachusetts Contingency Plan (MCP, 310 CMR 40.0000) requires that an As-Built Construction Report be prepared for any disposal site where an Engineered Barrier, cap or other on-site system for the containment and/or physical immobilization of oil and/or hazardous material is constructed as part of the remedial action alternative [310 CMR 40.0875(1)(b)]. The Comprehensive Remedial Action (CRA) implemented for the sediment portion of the Disposal Site includes construction of a clean cover (cap); therefore, this Phase IV As-Built Report has been prepared to meet the MCP requirements. The MCP also requires that a Final Inspection Report be prepared upon completion of construction activities and implementation of the CRA [310 CMR 20.0878]. A final inspection was conducted after remedial construction activities were completed and is described in this report.

## 1.2 Report Organization

In accordance with 310 CMR 40.0875(2), this report documents the construction activities conducted, techniques and materials used, tests and measurements performed and any significant modifications to the design or construction of the CRA as described in the combined Phase III Remedial Action Plan (RAP) and Phase IV Remedy Implementation Plan (RIP) submitted by AMEC (June 2017). The remainder of this Phase IV As-Built Report consists of the following sections:

- Section 2: Background – A description of the project background, roles of the parties involved in implementing the CRA, a summary of CRA activities, and a list of permits and approvals obtained.
- Section 3: Phase IV Implementation and As-Built Conditions – A discussion of construction materials and installation activities for the various facets of the CRA including a discussion of modifications from the Phase IV RIP.
- Section 4: Final Inspection – A description of the final inspection conducted by the Licensed Site Professional (LSP).

Supporting information are provided in figures, tables, and appendices referenced throughout the report.

## 2.0 BACKGROUND

### 2.1 Site Location and Locus Map

For the purposes of this report, the “Wynn Property” refers to the combined areas of land and water which are currently owned by Wynn and are located at One Broadway in Everett and an unnumbered parcel on Alford Street in Boston (**Figure 1-1**). The Wynn Property encompasses approximately 35 acres, which includes an upland portion (approximately 22 acres) and a portion of the adjacent Mystic River to the southwest (approximately 13 acres). The approximate latitude and longitude for the Site are 42.39 degrees north and 71.07 degrees west, respectively. The Universal Transverse Mercator (UTM) coordinates are approximately 4,695,650 meters north and 329,600 meters east.

The upland portion of the Wynn Property is an irregularly shaped, approximately 22-acre parcel of land roughly bounded by Alford Street/Broadway (Route 99) to the east, Massachusetts Bay Transit Authority (MBTA) railroad tracks to the west, an MBTA bus repair and maintenance facility to the north, and the Mystic River to the south. The sediment portion of the Wynn Property consists of an approximately 13-acre embayment of the Mystic River which is bounded to the northwest and north by the upland portion of the Wynn Property and to the northeast and east by the Boston Water and Sewer Commission’s Material Handling Facility (180-220 Alford Street).

For the purposes of this report, the “Disposal Site", or more formally the Former Everett Staging Yard Disposal Site, includes the uplands where chemical manufacturing occurred and the portion of Mystic River sediment which has been impacted by chemicals from the uplands. The boundary for the sediment portion of the Disposal Site depicted on **Figure 1-2** was drawn to separate areas where concentrations of Disposal Site-related chemicals are above “local conditions” from areas where concentrations are generally at or below local conditions. The disposal site boundary was also drawn considering the Conceptual Site Model (CSM) and principles of sediment transport dynamics. Delineating the extent of Disposal Site-related chemicals in sediment based on local conditions indicates the maximum potential extent of the aquatic disposal site boundary. Given the many historical and ongoing sources of contamination to the Mystic River (as well as natural sources of the same chemicals) this may still be an over-estimate of the impacts directly associated with chemical manufacturing on the upland portion of the Wynn Property.

The Disposal Site boundary encompasses approximately 7.8 acres of sediment. The main portion in the embayment encompasses approximately 7.3 acres and a smaller intertidal area to the west is approximately 0.5 acres. The total area within the Disposal Site boundary which poses a risk to benthic communities (the Remediation Area) is approximately 7.4 acres. This includes 7.3 acres in the main embayment and 0.1 acres in the smaller area to the west (**Figure 1-2**).

### 2.2 Regulatory History and Status

O'Donnell Sand & Gravel, Inc. (O’Donnell) submitted the initial notification of a release on the Wynn Property in January 1996 based on the presence of elevated concentrations of certain metals and petroleum hydrocarbons in soil as well as areas of low pH in groundwater. Consulting Engineers & Scientists (CES) filed a Phase I Initial Site Investigation and Tier Classification (classifying the Former Everett Staging Yard Site as Tier II) on behalf of O’Donnell in January

1997 (CES, 1997). Following the purchase of the property by Mystic Landing, LLC in 2001, additional subsurface and sediment investigations were completed under Tetra Tech Rizzo and others which were documented in a Phase II Report submitted in December 2007.

FBT Everett Realty, LLC purchased the property in October 2009 and in February 2012 GEI submitted a Phase II Comprehensive Site Assessment (CSA) which summarized the work previously described in the Tetra Tech Rizzo Phase II Report (no new sampling was performed). Wynn purchased the property in January 2015 and in December 2015, GZA GeoEnvironmental, Inc. (GZA) submitted a Supplemental Phase II Report which contained the results from an extensive sampling program as well as an updated Disposal Site boundary and risk characterization (GZA, 2015).

In December 2016, AMEC prepared a Revised Supplemental Phase II CSA Report (AMEC, 2016) which presented the CSM, assessed risks to human health and the environment, and defined the limits of those areas which could pose a risk. The CSM and an evaluation of local conditions identified arsenic, lead, mercury, and vanadium as specific contaminants of concern tied to historical manufacturing operations and processes on the property. The presence of phthalates and polychlorinated biphenyls (PCBs) detected in sediment were determined to be related to historical operations on the adjacent Monsanto West property.

In June 2017, a combined Phase III RAP and Phase IV RIP for the sediment portion of the Former Everett Staging Yard Site was submitted to MassDEP (AMEC, 2017). The goal of the remedial action was to eliminate significant risk to benthic organisms associated with exposure to contaminated sediment at concentrations which exceed benchmarks or local conditions. Sediment remediation was accomplished through the dredging and capping or capping alone of contaminated sediments. Dredged materials were transported off-site for disposal. These remedial actions addressed sediment contamination associated with former operations on the Wynn Property (i.e., arsenic, lead, mercury and vanadium). Contamination from other sources (metals likely from a drain pipe, phthalates and PCBs from Monsanto West, and polycyclic aromatic hydrocarbons (PAHs) and petroleum from stormwater runoff, industrial releases, and shipping-related impacts) was remediated incidentally during the remediation of the four metals associated with former operations on the Wynn Property. Dredging and installation of the cap were largely completed between October 2017 and March 2018.

On July 18, 2018, following discussion with MassDEP (Mr. Andrew Clark), Matt Grove of AMEC notified MassDEP of a Condition of Substantial Release Migration (SRM) which had resulted in the presence of phthalates (primarily bis(2-ethylhexyl)phthalate or BEHP) and PCBs in sediment on the Wynn Property at concentrations above local conditions. MassDEP issued RTN 3-35073 for this release so that it could be tracked separately from remedial actions related to metals contamination associated with the Former Everett Staging Yard Disposal Site. In accordance with Massachusetts General Law (M.G.L.) Chapter 21E, Section 5D(a)(4), Wynn is not required to conduct an Immediate Response Action (IRA) to address RTN 3-35073 because the concentrations of BEHP and PCBs have migrated in surface water from a known upstream source and do not pose an Imminent Hazard at the downstream Wynn Property. Wynn never owned or operated the upstream property from which BEHP and PCBs are derived. On August 15, 2018 Wynn filed a Downgradient Property Status (DPS) Submittal under RTN 3-35073 for BEHP and

PCBs present in sediments on their property which remain following remediation of metals in sediments associated with RTN 3-13341.

### 2.3 Roles and Responsibilities of the Parties Involved in Implementing the CRA

Wynn, as an Eligible Person [310 CMR 40.0006 (12)], is the Potentially Responsible Party for the Disposal Site. The other primary parties involved in the implementation of the CRA were:

- Remedial Action Contractor – SPS New England, Inc. (SPS) of Salisbury, Massachusetts
- LSP, Engineer of Record, and Construction Quality Assurance Consultant – AMEC

SPS, as remedial action contractor, employed several subcontractors to assist with remediation. The major remediation subcontractors were:

- Charter Contracting Company, LLC (Charter) of Boston, Massachusetts – mechanical dredging, operation of residual water treatment system, dewatered sediment processing & handling, capping
- J.R. Vinagro Corporation of Johnston, Rhode Island – barge demolition
- Lockwood Remediation Technologies, LLC of Leominster, Massachusetts – water treatment system construction
- Steele Associates Marine Consultants, LLC (Steele) of Falmouth, Massachusetts – bathymetric surveying
- ESS Laboratory (ESS) of Cranston, Rhode Island – environmental laboratory

AMEC reviewed the remediation contractor's submittals and provided construction observation and quality assurance for the CRA. AMEC employed subcontractors to assist with construction quality assurance (CQA), and LSP activities. The major subcontractors were as follows:

- LBP Solutions, LLC of Foxborough, Massachusetts – asbestos project monitor
- ProScience Analytical Services of Woburn, Massachusetts – asbestos analytical laboratory
- CEI Labs, Inc. (now Eurofins CEI, Inc.) of Cary, North Carolina - asbestos analytical laboratory

### 2.4 Summary of CRA Activities

The selected remedy included the following major activities:

- Mobilization and site preparation,
- Environmental controls,
- Barge demolition,
- Debris removal,
- Dredging,
- Sediment processing, water treatment and off-site disposal,

- Capping, and
- Demobilization.

Appendices C and D of the June 2017 combined Phase III RAP and Phase IV RIP contained the 60% Issued for Permitting package of Construction Drawings and Specifications. Final documents were issued for construction on August 23, 2017. Revisions and modifications to the drawings and specifications prior to and during construction are discussed in the following section.

## 2.5 Permitting

Construction and implementation of the Remedial Action primarily consisted of demolition, dredging and capping. These activities required federal, state, and local permits and/or approvals as outlined below. Inspection, sampling and analysis requirements for permits were included in the actual permits.

Permits that were obtained by Wynn included:

| Permit/Approval | Permittee/ Applicant | Issuing Agency | Date of Issue or Effective Date | Permit/file/Reference Number |
|---|---|---|---|---|
| Section 404 Permit | Wynn MA, LLC | U.S. Army Corp of Engineers | December 12, 2016 | NAE-2013-1026 |
| Section 404 Permit Modification | Wynn MA, LLC | U.S. Army Corp of Engineers | September 11, 2017 | NAE-2013-1026 |
| Chapter 91 Waterways License (Navigational Dredging) | Wynn MA, LLC | MassDEP | August 3, 2016 | 14188 |
| Chapter 91 Waterways License (Remediation) | Wynn MA, LLC | MassDEP | September 25, 2017 | 14512 |
| Combined 401 Water Quality Certification (Remediation) | Wynn MA, LLC | MassDEP | August 25, 2017 | X270532 |
| Combined 401 Water Quality Certification (Navigational Dredging) | Wynn MA, LLC | MassDEP | January 22, 2016 | X266062 |
| MEPA Certification – Notice of Change | Wynn MA, LLC | Executive Office of Environmental Affairs | April 7, 2017 Secretary's Certificate Issued | EOEEA #15060 |
| Order of Conditions (Remediation) | Wynn MA, LLC | Everett Conservation Commission | November 25, 2015 | 022-0095 |
| Order of Conditions (Navigational Dredging) | Wynn MA, LLC | Everett Conservation Commission | September 24, 2015 | 022-0098 |

| Permit/Approval | Permittee/ Applicant | Issuing Agency | Date of Issue or Effective Date | Permit/file/Reference Number |
|---|---|---|---|---|
| Order of Conditions (Remediation) | Everett Property LLC | Boston Conservation Commission | June 14, 2017 | 006-1517 |

## 3.0 PHASE IV REMEDY IMPLEMENTATION AND AS-BUILT CONDITIONS

Phase IV Remedy Implementation activities were conducted from September 18, 2017 through August 9, 2018. The primary components of the sediment remediation included:

- Mobilization and site preparation,
- Environmental controls and monitoring,
- Barge demolition,
- Debris removal,
- Dredging,
- Sediment processing, water treatment and off-site disposal,
- Capping, and
- Demobilization

The following sections provide a detailed summary of the CRA as implemented at the Site. AMEC provided oversight of the remedial construction activities for Wynn. Selected photographs taken during implementation are included in **Appendix A.**

### 3.1 Mobilization and Site Preparation

An existing conditions bathymetric survey was conducted by Steele on September 18, 2017 to determine existing elevations and refine the dredging plan based on current data. The existing conditions (and other bathymetric surveys during dredging and capping) were performed using a 24-foot aluminum survey vessel outfitted with an R2Sonic 2024 broadband multibeam echosounder with a beam with of 1º x 2º at the frequency of 200 kHz. A CODA Octopus F175 inertial motion reference unit provided attitude and heading corrections. A Valeport SVS real-time probe and Digibar S profile probe provided sound velocity corrections. Horizontal positioning was achieved using a Trimble SPS855 RTK positioning system and data was logged using Hypac 2015 and Hysweep data acquisition software.

On September 27, 2017, Charter and SPS began the mobilization of equipment and materials to the SPS bulkhead located on the Island End River (95 Behen Street, Everett, MA), approximately 1.5 miles south of the Disposal Site (**Figure 1-1**). Due to the ongoing soil remediation and construction on the upland portion of the Wynn Property, there was no area large enough to serve as the staging and material processing area for the sediment remediation. The material processing area constructed at the SPS bulkhead consisted of a series of up to five separate lined and blocked cells (**Figure 3-1**; note that bin 5 was never constructed). The bin construction was as follows:

- A high-density polyethylene (HDPE) geomembrane liner was installed over the bulkhead pavement to prevent migration of water from the material mixing bins.
- Bin blocks and jersey barriers were placed on top of this liner in the layout of the bins.
- A temporary layer of pavement was constructed in the base of the sediment bins to protect the geomembrane liner from equipment damage during unloading, stabilization and handling activities.

- The paved layer in the bins was strategically sloped towards the corners of the bins where sumps were installed to remove excess water.
- The liner was wrapped up around the exterior of the bin blocks and jersey barriers in order to form a water tight basin.
- An access road consisting of crushed stone was constructed between the bins to allow for a machine to easily access all sides of the mixing bins. Beneath the top 3-6 inches of stone, an HDPE liner was placed to protect the remaining stone from contamination.

Along with this layout, a spill plate was laid across the entire width of the gap between the material barges and the edge of the mixing bins. The plate was large enough to prevent material from falling onto areas outside of the barge and into the Mystic River. The sediment processing area also included a Portland cement silo, lighting plants, a 21,000-gallon frac tank (sump water storage), decontamination pad/wheel wash, material storage area, and office trailers.

In addition to the sediment processing area construction preparation, SPS and Charter mobilized tugboats, sediment barges, work boats, work barges, excavators, material handlers, and loaders. Charter constructed two field offices and an equipment storage room on the work barge that held the dredge excavator. Lockwood Remediation Technologies, LLC designed and constructed a temporary water treatment system on the water treatment barge. The details of the water treatment system are discussed in Section 3.6.

## 3.2 Environmental Controls and Monitoring

On September 28 and 29, 2017 a turbidity curtain and absorbent boom were installed across the embayment from the end of the Wynn concrete pier to the bank of the adjacent Boston Water and Sewer Commission (BWSC) property (see photographs in **Appendix A**). The turbidity curtain was installed to limit the migration of demolition debris and suspended sediment to areas outside the active work area.

To ensure the turbidity curtain was working effectively, turbidity readings were taken (and recorded) daily at three testing locations: inside the turbidity curtain, just outside the turbidity curtain, and 50 feet away from the project work site (background). Three turbidity readings were taken at each of the three testing locations: at the water surface, at the midpoint depth, and at the mudline. Turbidity monitoring was conducted using a Horiba U-50 Multi-Parameter Water Quality Meter with built-in data logging which was calibrated each day prior to use. The daily turbidity readings are summarized in **Table 3-1**.

In addition to the daily measurements, turbidity was measured inside the curtain prior to opening the curtain to determine if it was safe to open the curtain. The protocol for determining if the turbidity curtain could be opened (presented in **Table 3-2**) was based on ongoing operations, tidal cycle, and comparison to the background readings. During the remediation, the turbidity readings inside the curtain prior to a planned opening never exceeded 50 nephelometric turbidity units (NTU).

### 3.3 Barge Demolition

Demolition of five abandoned barges (shown on **Figure 1-2**) was required for remedy construction but was not in and of itself a remedial action. One sunken barge (#1 on **Figure 1-2**) and four additional barges located in the intertidal zone (#2 through #5 on **Figure 1-2**) were removed prior to dredging. The barges were not structurally stable such that they could be removed with salvage equipment and removed intact. As a result, they were dismantled/demolished in place.

On September 18, 2017, the barges were surveyed for presence of suspect asbestos, lead paint and other hazardous materials prior to the start of demolition. The primary focus of the assessment was Barge #2 as several structures were present on the barge (see photos in **Appendix A**). A total of 11 samples of suspected asbestos containing material (ACM) were collected by AMEC's certified asbestos inspector and sent to CEI Labs, Inc. for analysis. ACM was confirmed in two of the 11 samples which included roof material and window glaze of the structure sitting atop of the barge (see **Appendix B** for the asbestos sampling summary and laboratory results). On September 28, 2017 an Asbestos Notification Form (BWP AQ 04) was submitted to the MassDEP prior to the start of abatement by Vinagro on September 28 and 29, 2017. The ACM was placed in a sealed dumpster which was temporarily stored on site until October 2, 2017 when it was transported under an Asbestos Waste Shipping Record (AWSR) to Minerva Enterprises Landfill in Waynesburg, Ohio for disposal (see **Appendix B** for a copy of the AWSR).

The barge demolition commenced on October 2, 2017 and was also performed by Vinagro. Demolition was conducted using both barge-mounted and land-based equipment (see **Appendix A** for select photographs of barge demolition). Barges #3 and #4 were demolished using a land-based excavator (Cat 345 long reach and Cat 335F) that temporarily stockpiled the debris on polyethylene sheeting on the upland area adjacent to the shoreline. Barges #1, #2, and #5 were demolished using a barge mounted excavator (Volvo 480E). The wooden debris from these barges was placed in a work barge and unloaded onto the upland temporary stockpile area. Tugboats were used to move the demolition barge with the excavator and the debris barges around the embayment. Typically, the demolition of the barges using land based equipment was conducted at low tide and the demolition of the barges using water based equipment was conducted at high tide.

During the unloading of the debris from Barge #1, a 12-inch diameter pipe with a black coating was observed (see field report and photos in **Appendix B**). The pipe was separated from the wooden debris and sampled, along with the coating on some of the wooden debris, to determine if the materials were ACM. The laboratory results from ProScience Analytical Services (Woburn, Massachusetts) were negative for asbestos for both the pipe and wood coatings. A copy of the analytical laboratory report is included in **Appendix B**.

The stockpiled demolition materials were loaded from the temporary stockpile onto trucks for disposal. In all, 557.85 tons of barge demolition debris (creosote treated timbers) was transported to Aggregate Recycling Corporation of Eliot, Maine for disposal (see **Appendix C** for copies of the shipping documents). The barge demolition was substantially complete on October 14, 2017; however, Vinagro continued to clean up small pieces of demolition debris in the tidal flat using a work boat for several days following substantial completion.

## 3.4 Debris Removal

Prior to the start of the dredging operations, a debris survey was conducted to determine the extent of debris in the dredge area (see **Appendix D** for a copy of the survey). The survey was conducted using a 200 kHz Multi-Beam Sonar and to confirm the imagery the survey was also conducted using a 900 kHz Side Scan Sonar. A total of 58 targets were identified in the debris survey most assumed to be pilings associated with the razed dolphins from the former Monsanto shipping terminal.

Pilings were removed using a crane with a toothed open clamshell bucket. The crane was mounted on a barge that was moved into place with a tugboat. The dredge excavator with the environmental clamshell bucket was also used to remove some of the pilings but due to the difficulty with the bucket gripping the pilings, most of the pilings were removed with the crane. After the pilings were pulled from the sediment, they were placed in barges and transported to the sediment processing area for later disposal. In total, 232 wooden pilings and 7 steel pilings were removed as shown on **Figure 3-2**. A total of 110.25 tons of debris from the pilings were disposed of at Aggregate Recycling Corporation of Eliot, Maine (see **Appendix C** for a copy of the material shipping records).

## 3.5 Dredging

Mechanical dredging was used for the portion of the Remediation Area to be dredged. The dredged area was separated into two distinct areas:

- Elevation based (navigation dredge) – dredge to elevation -16.5 NAVD88
- Depth based (remediation dredge) – dredge to 1.5 feet below existing mudline

These two dredge areas equaled approximately 4.3 acres (2.2 acres in the main part of the embayment and 2.1 acres in the intertidal area). The limits of the sediment removal areas are shown on the Record Drawings (**Appendix E**).

In the elevation based dredge area, sediment was removed to elevation -16.5 NAVD88 to allow for sufficient depth for navigational purposes after capping. This included targeted dredging of certain areas of the deeper channel to achieve a final capped elevation of -15 NAVD88. In the depth based dredge area, remedial dredging was performed to a depth of 18 inches below existing mudline.

### 3.5.1 General Sediment Dredging

The dredge area was subdivided for construction purposes by SPS/Charter into 30 cells as shown in **Figure 3-3**. Cells 1 through Cell 12 along with Cell 27 and Cell 30, were dredged to a depth of -16.5 feet NAVD88 (elevation based, navigational dredging). Cell 14 through Cell 25 along with Cells 28 and Cell 29, were dredged to a depth of 18-inches below the original sediment depth (depth based remedial dredging). Cell 13 and Cell 26 were dredged to varying depths (18 inches or greater) to act as the transition between the remediation dredging and the navigation dredging. Bathymetric surveys were routinely conducted to confirm that the dredging had been conducted to the required elevations.

Sediment removal was conducted by mechanical dredging using an Anvil Attachments, 4 cubic yard, level-cut, hydraulic-actuated, environmental clamshell bucket on a Komatsu PC1250 excavator (See **Appendix A** for photographs). The excavator was mounted on a 110' by 40' barge with hydraulic-actuated spuds. The dredge barge and bucket were equipped with positional sensors that integrated with the Dredge Bucket Positioning System software which tied into the electronic Real-time Kinematic Differential Global Positioning System. The dredge excavator used the network of inclinometers, pressure sensors, and trigonometric functions to calculate bucket depth with respect to tide level. These systems were connected to a heads-up display in the excavator cab that provided the operator with the real-time position of the bucket in relation to the bathymetry, target depth in plan and section view. A tugboat and support boats were used to move the dredge barge into place.

The sediment dredging commenced on October 16, 2017 and was completed on January 20, 2018. The duration of dredging was longer than anticipated due to weather, and delays in transporting the processed sediment to the off-site disposal facilities which resulted in insufficient room at the sediment processing area. The Phase IV Remedy Implementation Plan (AMEC, 2017) estimated that 24,110 cubic yards of sediment would be dredged; however, according to the dredge bucket files, 20,449 cubic yards of sediment were actually dredged. The difference between the two quantities is primarily due to changes in elevation observed in the pre-dredge survey (the survey data used for the design volume was several years old) which also resulted in changes to the dredge footprint (i.e., elimination of a dredge area in the main navigation channel due to changes in elevation). These changes reduced the overall volume of material which needed to be dredged in order to achieve the remedial and design objectives.

### 3.5.2 Asbestos-Impacted Sediment Dredging

During the sediment pre-characterization sampling program (described in Section 3.6.3 below), Wynn elected to analyze sediment for asbestos based on presence of asbestos in soil on the upland portion of the Disposal Site. Samples were collected from the 84 locations shown on Figure 1 in Appendix B of the Non-Traditional Asbestos Abatement Work Plan (the "NT Plan") in **Appendix F.** Asbestos was detected at a concentration of <1% in one of the samples tested by CEI Labs, Inc. (see Appendix C of the Non-Traditional Asbestos Abatement Work Plan in **Appendix F** for the full lab report). Per MassDEP's Bureau of Waste Prevention, any detection was sufficient to require the impacted sediment to be managed as asbestos containing waste.

On October 19, 2017, eight additional sediment cores (4 inner ring and 4 outer ring cores) were collected around the location of SED-C46 to delineate the extent of the asbestos-impacted sediment. No asbestos was detected in the four inner ring sediment samples analyzed by CEI Labs, Inc. (see **Appendix F** for the laboratory report). Therefore, the extent of the asbestos-impacted sediment was defined by the locations of the four inner ring samples (see Appendix B of the NT Plan for the location of the inner ring samples). On November 6, 2017, the NT Plan outlining the abatement procedures, which was prepared by Environmental Health & Engineering, Inc. (EH&E) of Needham, was submitted to MassDEP. The NT Plan was subsequently approved by MassDEP on November 14, 2017.

On December 20, 2017, a small barge equipped with two dewatering boxes was mobilized to the embayment. The dewatering boxes were placed on top of polyethylene sheeting and a perimeter berm was constructed. The dewatering boxes were lined with 400-micron filter fabric. Sediment was dredged and placed directly into the dewatering boxes (See **Appendix A** for photographs). A pumping system was attached to the drains on the dewatering boxes and the drain water was passed through a 5-micron filter before being processed in the full water treatment system (described in Section 3.5.2) and eventually discharged within the turbidity curtain.

The barge with the two dewatering boxes was transported by tugboat to the SPS bulkhead for temporary storage. On January 2, 2018, the dewatering boxes were transported to the Crossroads Landfill in Norridgewock, Maine and 6.55 tons of dewatered sediment were disposed as asbestos waste. The dewatering boxes were returned to SPS bulkhead where on January 23, 2018 the boxes were decontaminated. On January 29, 2018, 1.35 tons of decontamination waste was transported to Crossroads Landfill in Norridgewock, Maine for disposal as asbestos waste. Copies of the Asbestos Waste Shipping Records are included in **Appendix F**.

## 3.6 Sediment Processing, Water Treatment and Off-Site Disposal

### 3.6.1 Sediment Processing

As the sediment was dredged it was placed into hopper barges for dewatering. Once a barge was filled with dredged sediment, a tugboat would move the sediment barge from the dredge barge to the temporary water treatment barge (see photos in **Appendix A**). Once next to the water treatment barge, water that drained from the sediment could be decanted prior to transferring the sediment barge to the sediment processing area at the SPS bulkhead. Beginning on October 23, 2017, if the sediment was overly saturated with water, a coagulant (LRT-E-50) was added to the water in the barge to aid in the precipitation of the sediment from the water. Typically, the sediment from the navigation dredging area was loose and required the addition of the coagulant. Sediment dredged from the tidal flats (depth based dredging area) was more cohesive and did not require the addition of the coagulant.

After the decanted water was pumped from the sediment barges to the extent practical, the sediment barges were moved by a tugboat from the work area to the SPS bulkhead for unloading and processing. The sediment barges would be positioned so that the sediment could be unloaded into Bin 1 or Bin 2 depicted on **Figure 3-1**. The sediment was removed from the barge using a materials handler or excavator with an open clamshell bucket. After the barge was empty, a loader was used to transfer Portland cement from the silo to the top of the sediment in the bin. The sediment and Portland cement was churned using an excavator with a mixing head. The material was transferred by excavator from Bin 1 or Bin 2 to one of the surrounding bins (2 through 4) to allow it to solidify to a material that passed the paint filter test for transportation and disposal. Once the material passed the paint filter test (i.e., no free water), the sediment was stacked into a stockpile (generally in Bins 3 or 4) or directly loaded into truck for off-site transportation.

Due to the high water content in some of the sediment, an attempt was made to speed up drying by adding Sludgeguard, a bulk solidifier amendment, in addition to the Portland cement. However, the use of Sludgeguard was abandoned after several days due to its ineffectiveness.

Any water that separated from the sediment or rain water that collected in the bins was pumped from the sumps to a 21,000-gallon frac tank. The water from the frac tank was transferred to empty sediment barges and treated back in the embayment using the water treatment system described in Section 3.6.2.

### 3.6.2 Water Treatment

The water treatment barge was anchored via spuds inside the turbidity curtain (see photos in **Appendix A**). Water was initially pumped into two 18,000-gallon weir tanks and then flowed by gravity into two 10,000-gallon clarifiers. Two chemicals (LRT-E-50 Coagulant and LRT-800 Series Flocculant) were added to the water as it entered the weir tanks to aid in the settling process. From the clarifiers the water was pumped through a multi bag filter vessel (containing six No. 2 bag filters). From the bag filter the water was pumped through a 10,000-pound zeolite vessel and then through four carbon vessels containing granular activated carbon. After the water passed through the carbon vessels and the flow meter/totalizer, it was discharged to the embayment inside the turbidity curtain. The water treatment system schematic is shown in **Figure 3-4** and the water treatment system layout is shown in **Figure 3-5**.

Samples were collected from the effluent for Disposal Site-related metals (arsenic, lead, mercury and vanadium), PCBs, BEHP, extractable phase hydrocarbons (EPH) fractions, total suspended solids (TSS), and pH. Effluent samples were collected weekly for the first five weeks of system operation and then on a monthly basis for three months until discharge was terminated. The results of the effluent sampling are summarized in **Table 3-3**. Laboratory reports for influent and effluent samples are included in **Appendix G**.

In total, 706,616 gallons of water were processed through the temporary water treatment system between October 18, 2017 and January 20, 2018.

### 3.6.3 Off-Site Disposal

Prior to the start of navigational and remedial dredging, the sediment to be dredged was pre-characterized in situ. The dredging area was divided into 84 sampling cells each representing approximately 500 tons (315 cubic yards) of in place sediment (see **Figure 3-6** for sampling locations). A five-point composite sample was collected from each core to represent the cell. Five individual grab samples from each sediment cell core were screened with a photoionization detector (PID). The depth interval with the highest PID readings was selected for volatile organic compound (VOC) analysis. If all PID readings in a core were the same or zero, the grab sample was randomly selected. The remaining sediment was used to prepare the composite sediment sample with at least five points across the dredging depth intervals. Pre-characterization sediment samples were analyzed without the addition of Portland cement.

The grab and composite samples were transported to ESS Laboratory for analysis of the following parameters: corrosivity (pH), flashpoint, reactivity (cyanide and sulfide), RCRA 8 metals, VOCs, semi-volatile organic compounds (SVOCs), PCBs, pesticides, herbicides, and moisture content. Toxicity Characteristic Leaching Procedure (TCLP) testing was run for each of the RCRA 8 metals on each sediment sample. TCLP testing would also have been performed if concentrations of other constituents detected in sediment were above theoretical levels at which the TCLP criteria

may be exceeded; however, none of the concentrations were exceeded. The laboratory reports from the pre-characterization samples are located in **Appendix H**

Shipping of the processed sediment commenced on October 20, 2017. Initially, sediment was shipped to Waste Management's Turnkey Landfill in Rochester, New Hampshire. Multiple truckloads of sediment were rejected at the Waste Management landfill because the facility determined that the sediment was too wet for them to effectively work once it arrived at the landfill. The solution was to allow the processed sediment to sit in the sediment bins for a longer period to allow more water to drain from the sediment. Once Waste Management allowed the shipments to the Turnkey Landfill to resume, they limited the number of shipments per day; therefore, material was also shipped to Waste Management's Crossroads Landfill in Norridgewock, Maine. Due to the need to further increase the amount of processed material which could be shipped off-site, the Sunny Farms Landfill in in Fostoria, Ohio was added as a disposal facility. Processed sediment was trucked to the MHF Services Transload Facility in Worcester and placed in railcars for shipment to Sunny Farms.

In total, approximately 40,162.63 tons of processed sediment was shipped for landfill disposal on MassDEP Bills-of-Lading (BOLs):

- 3,281 tons were shipped to Turnkey Landfill
- 25,056.12 tons to Crossroads Landfill, and
- 11,824.88 tons to Sunny Farms Landfill.

Copies of the previously submitted BOLs are included in **Appendix C**.

During the sediment dredging, uncontaminated debris was recovered including: wood (not associated with the barge demolition), concrete, granite blocks, a Jersey barrier, crane mats, old turbidity curtains, steel cable, etc. In total, 47.06 tons of miscellaneous uncontaminated debris was disposed of at Aggregate Recycling Corporation of Eliot, Maine (see **Appendix C** for a copy of the shipping manifest).

## 3.7 Capping

The primary function of the cap material is to provide a clean substrate suitable as habitat for benthic organisms. Once dredging was completed, imported clean cap material was placed to restore the dredged areas to pre-construction elevations (tidal flats) or to the permitted elevation of -15 feet NAVD88 (navigation dredge areas). In either case, the final cap thickness was to be approximately 18 inches to achieve the remedial goals of the project (note that the construction specifications allowed for 2 inches of overplacement and 1 inch of underplacement on cap materials). In addition, there were areas of the embayment outside the dredged areas where approximately 18 inches of clean cap material was placed directly on the underlying sediment. The total capping area was approximately 7.26 acres (5.17 in the main part of the embayment and 2.09 acres in the intertidal areas). A total of 21,795 CY of cap material was placed to achieve the final grades shown on the as-built cap plan in **Appendix E**.

For purposes of construction, SPS/Charter divided the cap area into 42 cells (see **Figure 3-7**). Capping commenced on January 11, 2018 in the C13 tidal flat cell and on January 12, 2018 in

the C6 through C8 Cells. Bathymetric surveys were routinely conducted to evaluate whether the necessary cap thickness had been achieved within a particular cell or group of cells. Capping with the exception of cell C13 was completed on March 20, 2018. The final cap for C13 was completed on August 9, 2018. Additional details about the C13 area are included in Section 3.7.5.

During all of the capping work, the turbidity curtain remained installed across the embayment to reduce any turbidity getting to the Mystic River. As dredging was still ongoing in the navigation channel at the time capping started, a second turbidity curtain was installed separating the tidal flat capping area from the navigation channel dredging area. This second turbidity curtain was removed once the dredging work was complete.

Additional details above the cap materials and installation of the different cap types are provided in the following subsections.

### 3.7.1 Cap Materials

The 42 cells on **Figure 3-7** included four distinct capping types:

- Sand Cap (Type A) - coarse sand designed to resist propeller induced erosion in the channel.
- Navigation Area Cap (Type B) - 2-layered cap composed of a layer of coarse sand (Type A material) capped with a medium gravel (Type B material) to resist propeller induced erosion near the docks.
- Tidal Flat Cap (Type C) - a silty sand to match existing material in the tidal flats.
- Modified Sand Cap (Type MA) – coarse sand blended with ¾-inch crushed stone to resist erosion and downslope movement on subtidal slopes.

In addition, outlet protection stone (8-inch median diameter) was placed adjacent to the BWSC stormwater outfall to protect the cap from erosion by stormwater.

The cap material was supplied by several gravel quarries. The approved source for each of the cap materials was:

- Type A Sand – Aggregate Industries, Wrentham Quarry
- Type B Gravel - Aggregate Industries, Swampscott Quarry
- Type C Silty Sand – Aggregate Industries, Littleton Quarry
- Type MA Blended Sand – Aggregate Industries, Littleton Quarry

Samples of the four cap materials listed above were submitted for grain size analysis at a frequency of one sample per 500 cubic yards to verify that the material met the specifications. Due to difficulties in obtaining sufficient quantity of materials which exactly met the grain size distributions in the specifications, the ranges were adjusted in consultation with AMEC's geotechnical, coastal, and channel design engineers. The original and final grain size ranges are summarized in **Table 3-2**. Grain size data for individual material samples are included in **Appendix H**. In addition, the cap material samples were also tested at a frequency of one per 500 cubic yards for VOCs, SVOCs, pesticides, PCBs, herbicides, dioxins, MCP 14 metals, and total organic carbon (TOC) to determine that they were contaminant free (see **Appendix H** for

the laboratory analytical results). All accepted cap materials were non-detect for organic constituents and herbicides (excluding TOC) and below the MCP S-1 and/or MassDEP published background values for metals.

Cap material was delivered to the SPS bulkhead and stored in previously constructed bins which had been decontaminated by power washing the pavement bottom and HDPE liner laid over the sidewalls after all the sediment was removed. The wash water was pumped to a barge which was then moved to the water treatment system for processing. When capping material was needed, hopper barges were loaded at the bulkhead and moved by tugboat to the embayment.

### 3.7.2 Sand Cap (Type A) Installation

In the subtidal areas outside the navigational dredge area (Cells A1 through A19 on **Figure 3-7**), approximately 18-inches of Type A (sand) was placed on either the dredged surface (Cells A1 through A4 and A19) or the pre-remediation sediment surface (cells A5-A18) so that the cap elevation was generally below –15 feet NAVD88. The sand layer was designed to resist propeller induced erosion which might occur in the channel. The cap material was installed using the dredge excavator with the environmental clamshell bucket (see **Appendix A** for photographs). Cells A1 through A19 required a total of 9,651 CY of Type A material.

### 3.7.3 Navigation Area Cap (Type B) Installation

In the navigation area (Cells B1 through B5 on **Figure 3-7**) the cap consisted of two layers: sand (Type A material) and gravel (Type B material). Initially an approximately 12-inch thick layer of sand was placed across the cells to strengthen the underlying sediment and support the gravel layer. Once the thickness of the sand layer was confirmed by bathymetric survey, an approximately 6-inch thick layer of gravel was placed on top of the sand. The actual in place thicknesses of the two layers varied slightly across the cells; however, the total cap thickness was approximately 18 inches as designed. The design maximum elevation of the top of the cap was approximately -15 feet NAVD88 in order to provide sufficient water depth for vessel passage and maneuvering even at low tide. The gravel layer was designed to resist propeller induced erosion during maneuvering into and away from the docks where propeller forces were expected to be strongest. Both the Type A sand material and Type B gravel were installed using the dredge excavator with the environmental clamshell bucket (see **Appendix A** for photographs). Cells B1 through B5 used 1,849 CY of Type A material and 1,557 CY of Type B material.

### 3.7.4 Tidal Flat Cap (Type C) Installation

As shown on **Figure 3-7**, there were three areas of intertidal capping: the eastern tidal flats (Cells C1 through C12), an intertidal area adjacent to the newly constructed bulkhead (Cell C13) and a small tidal flat area outside the embayment (Cell C14). Each of the intertidal areas were capped with Type C silty sand material.

For the large eastern tidal flat area (cells C1 through C12), the majority of the cap material was placed using the dredge excavator and a low ground pressure bulldozer. The dredge barge and sediment barge, loaded with Type C material, were moved into the area at high tide and cap material was unloaded to create a temporary stockpile in the water. At low tide, a low ground

pressure bulldozer that was staged in the upland construction site was used to spread the Type C material around to the required elevation (see **Appendix A** for photographs). In total, 6,378 CY of Type C material was used in the capping of Cells C1 through C12.

In the other two intertidal areas (Cell C13 and C14) the Type C material was directly placed using the dredge excavator with the environmental clamshell bucket. Depending on how much material was needed, full or partial buckets of cap material were collected from the sediment barge and deposited by slowly opening the excavator environmental bucket and allowing the material to be placed in a controlled manner. Cell C13 used 395 CY of Type C material and Cell C14 used 235 CY of Type C material. The intertidal cap was placed to the original grade elevations.

### 3.7.5 Cell C13 Cap Modification

A natural groundwater seep in Cell C13 began eroding a channel in the newly installed Type C cap material (see **Appendix A** for photographs). Over time the combination of the seep and tidal action eroded a significant portion of the cap. Multiple attempts were made to place additional Type C material during the capping process. However, this approach was abandoned as it became clear that the cap material would not remain stable over the long term. Wynn requested approval to place different cap materials in C13 to correct the erosion of the previously placed cap and manage flow from the seep from each of the agencies having jurisdiction over C13 as described below.

- On April 5, 2018, Wynn requested that Everett Conservation Commission Amend the Order of Conditions for DEP File No. 022-0109.
- On April 11, 2018, Wynn requested a modification to the existing USACE permit (NAE-2013-1026).
- On April 13, 2018, Wynn requested a modification to MassDEP 401 Water Quality Certification (Transmittal Number X270532).
- On May 24, 2018, Wynn requested a Minor Project Modification to MassDEP Chapter 91 License 14512.

In order to achieve the previously permitted design elevations in the C13 area, coarser grained, rounded materials (Type D) were placed on the existing subgrade. In addition, a fabric-lined, stone channel was constructed at the location of the seep to manage the water flow. The modified cap was constructed by placing a layer of ¾-inch rounded stone below a layer of 1.5 to 3-inch diameter rounded stone. The seep channel was constructed of 8-ounce nonwoven filter fabric on top of the existing Type C material followed by a six-inch layer of ¾ inch rounded stone followed by a layer of four-inch rounded stone with a thickness as needed to meet the previously permitted elevations (see **Appendix A** for photographs).

The modified cap, including the channel, were installed by SPS between August 2, 2018 and August 9, 2018. All work was conducted in the dry when the C13 area was exposed at low tide. Elevation control was completed using survey grade stakes to ensure the final cap elevations were achieved. The excavator barge and material barge were strategically positioned based on

the work area and tide to allow for material placement with the long reach excavator (see photo in **Appendix A**).

### 3.7.6 Blended Sand Cap (Type MA) Installation

In the original design the transition areas between the navigational dredge area and intertidal areas were to be capped with Type A sand. However, material that met the original Type A specification was unable to be procured even by procuring a blended product. After consulting with AMEC's geotechnical engineers, the decision was made to blend coarser material ¾-inch stone with sand that most closely met the design specification for use in the transition areas between MLW and the navigational channel. The grain size distribution for this material is shown on **Table 3-4**. The blended sand/stone was placed as an approximately 18-inch thick layer in Cells MA1 through MA4 on **Figure 3-7**. A total of 1,651 CY of the blended sand cap was installed in these areas.

### 3.7.7 Outlet Protection Structure

Adjacent to the existing BWSC stormwater outfall pipe in the southern corner of the tidal flats (Cell C1 on **Figure 3-7**), stone outlet protection was installed to protect the cap from erosion. The stone outlet protection was designed to be 34 feet long and 15 feet wide at is widest point. After the area was dredged, Type C cap material was placed to bring the area close to the desired final grade. An 8 ounce non-woven filter fabric was placed on the newly installed cap material to prevent migration of fine particles through the voids in the stone and distribute the weight of the stone to prevent settlement into the underlying cap material (see photos in **Appendix A**).

The layout of the stone outlet protection was modified after the March 3, 2018 inspection indicated that the flow of water from the outfall had changed slightly from pre-dredging to post capping. The outfall protection was shortened and widened by removing stone from the northern end and placing it on the east side near the outfall pipe (see photos in **Appendix A**). Additional geotextile was shingled under the existing fabric prior to relocating the stone. This change in layout was made to resist erosion of the cap from the change in flow pattern observed in the field.

## 4.0 FINAL INSPECTION

AMEC provided a full-time field construction inspector to observe the progress of construction as the LSP's representative. AMEC's full-time field inspector was responsible for observing the construction and preparing daily reports and other Construction Quality Assurance forms to document the construction in sufficient detail and with sufficient continuity to provide documentation that the construction complies with the design drawings and specifications. Documentation included daily work summaries of construction activities, field measurements, and construction photographs.

The LSP was directly involved in the review of the interim survey data which was used to determine whether dredging or capping cells had achieved the required elevations. Final completion of the dredging and capping components was determined based on final acceptance of all dredging or capping cells. In addition, the LSP conducted site visits and inspections on several occasions during the course of the work as specific issues were identified.

As required by 310 CMR 40.0878(3) a list of any federal, state, or local permits, licenses and/or approvals related to the design, construction and/or operation of the selected remedial action alternative is included in Section 2.5 of this report.

The final inspection of the majority of the project was performed on March 3, 2018 in accordance with 310 CMR 40.0878. As mentioned above, interim survey data served as inspections of the components (i.e., dredging or capping) as each component was completed. Final inspection activities consisted of a site walk to check that completed construction activities had been performed in compliance with the Phase IV RIP, including the Construction Drawings and Specifications, and approved design modifications and submittals. Natalie Brown (Wynn), Bowen Chen (Wynn), Matt Grove (AMEC LSP), Danielle Ahern (AMEC Engineer of Record), and Katherine Mason (Charter Project Manager) attended the final inspection.

Danielle Ahern (AMEC Engineer of Record) and Bowen Chen (Wynn) inspected the C13 area on August 8, 2018 when construction was substantially complete. A final inspection was conducted by Matt Grove (AMEC LSP), Natalie Brown (Wynn) and Bowen Chen (Wynn) on November 13, 2018.

It is the opinion of the LSP that the Comprehensive Remedial Action has been constructed in accordance with the Phase IV RIP with modifications described herein that do not materially affect the intended function of the design. A Phase IV Completion Statement was prepared which includes an Opinion from the LSP that the Phase IV activities conform to applicable Phase IV requirements and performance standards. The certification required by 310 CMR 40.0009 is provided in Section G of the Phase IV Completion Statement which was submitted electronically through eDEP.

## 5.0 REFERENCES


AMEC Massachusetts, Inc. (AMEC), 2016. Revised Supplemental Phase II Comprehensive Site Assessment, Sediments Adjacent to the Former Everett Staging Yard, 1 Horizon Way, Everett, Massachusetts, Release Tracking Number 3-13341. December 29, 2016.

AMEC, 2017. Phase III Remedial Action Plan and Phase IV Remedy Implementation Plan, Sediment Portion of the Former Everett Staging Yard Disposal Site, 1 Horizon Way, Everett, Massachusetts, Release Tracking Number 3-13341. June 2017.

AMEC, 2018. Downgradient Property Status Submittal, Mystic River Sediments, One Broadway, Everett, Massachusetts, Release Tracking Number (RTN) 3-35073. August 2018.

Consulting Engineers & Scientists, Inc. (CES), 1997. Phase I Initial Site Investigation Report, Alford Street, Everett, Massachusetts. January 15, 1997.

GEI Consultants, Inc. (GEI), 2012. MassDEP RTN 3-13341, Phase II Comprehensive Site Assessment, Everett Staging Yard, 1 Horizon Way, Everett, Massachusetts. February 10, 2012.

GZA GeoEnvironmental (GZA), 2015. Supplemental Phase II Comprehensive Site Assessment, Former Everett Staging Yard, Water-Side, Everett, Massachusetts, Release Tracking Number 3-13341. December 2015.

Tetra Tech Rizzo, 2007. Phase II – Comprehensive Site Assessment, Everett Staging Yard, Chemical Lane, Everett, Massachusetts, DEP RTN 3-13341. December 26, 2007.go

# TABLES

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 10/16/2017 | 1130 | Inside Curtain | 4.7 | 5.1 | 8 |
| | | Outside Curtain | 4.1 | 2.7 | 3.3 |
| | | Background | 0 | 0 | 0 |
| 10/17/2017 | 1750 | Inside Curtain | 42.2 | 54.6 | 56.1 |
| | | Outside Curtain | 8.2 | 11.1 | 8.2 |
| | | Background | 5.1 | 6.6 | 6.7 |
| 10/18/2017 | 1830 | Inside Curtain | 34.4 | 34 | 30.1 |
| | | Outside Curtain | 11.9 | 10.1 | 10.7 |
| | | Background | 4 | 2.2 | 0 |
| 10/19/2017 | 1750 | Inside Curtain | 20.1 | 19.8 | 12.3 |
| | | Outside Curtain | 3.4 | 3.1 | 3.9 |
| | | Background | 0 | 0.1 | 0.1 |
| 10/20/2017 | 1430 | Inside Curtain | 9.3 | 8.9 | 7.6 |
| | | Outside Curtain | 4.2 | 3.9 | 3.7 |
| | | Background | 0 | 0.1 | 0.2 |
| 10/23/2017 | 1907 | Inside Curtain | 1.9 | 2.3 | 3.3 |
| | | Outside Curtain | 7.2 | 6.6 | 6.1 |
| | | Background | 0 | 0 | 0 |
| 10/24/2017 | 1439 | Inside Curtain | 7.3 | 7.3 | 8.4 |
| | | Outside Curtain | 2.2 | 2.7 | 1.4 |
| | | Background | 0.4 | 1.2 | 0 |
| 10/25/2017 | 832 | Inside Curtain | 4.9 | 10.4 | 16.6 |
| | | Outside Curtain | 2.1 | 5.6 | 6.8 |
| | | Background | 0.9 | 3.5 | 6.4 |
| 10/26/2017 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 10/27/2017 | 1741 | Inside Curtain | 4.7 | 5.5 | 5.6 |
| | | Outside Curtain | 5.2 | 5.5 | 6 |
| | | Background | 2.3 | 2.5 | 2.1 |
| 10/28/2017 | 0920 and 1225 | Inside Curtain | 8.1 | 14.1 | 13.9 |
| | | Outside Curtain | 3.8 | 10.5 | 9.9 |
| | | Background | 2.3 | 3.4 | 2.3 |
| 11/2/2017 | 1230 | Inside Curtain | 1.2 | 1.2 | 0.8 |
| | | Outside Curtain | 0.3 | 0.8 | 0.4 |
| | | Background | 0.1 | 0 | 0 |
| 11/3/2017 | 944 | Inside Curtain | 15.2 | 11 | 2.8 |
| | | Outside Curtain | 3.4 | 2.6 | 1.5 |
| | | Background | 1.7 | 0.3 | 0.1 |
| 11/4/2017 | 849 | Inside Curtain | 7 | 7.9 | 8.3 |
| | | Outside Curtain | 6.2 | 7.6 | 8.3 |
| | | Background | 1.1 | 0.5 | 1 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 11/6/2017 | 721 | Inside Curtain | 7.2 | 9 | 9.9 |
| | | Outside Curtain | 3.4 | 2.9 | 2.6 |
| | | Background | 0 | 0 | 0 |
| 11/7/2017 | 630 | Inside Curtain | 16 | 17.5 | 18.7 |
| | | Outside Curtain | 12.1 | 9.7 | 8.3 |
| | | Background | 1.5 | 0 | 0.8 |
| 11/8/2017 | 557 | Inside Curtain | 5.7 | 5.2 | 4.2 |
| | | Outside Curtain | 2.5 | 2.5 | 3.3 |
| | | Background | 0.3 | 0 | 0 |
| 11/9/2017 | 556 | Inside Curtain | 5.4 | 3.6 | 3 |
| | | Outside Curtain | 1.6 | 1.7 | 1.3 |
| | | Background | 0 | 0 | 0 |
| 11/10/2017 | 1720 | Inside Curtain | 4.4 | 3.3 | 5.1 |
| | | Outside Curtain | 3.1 | 3.3 | 4 |
| | | Background | 0.1 | 0.2 | 0.2 |
| 11/13/2017 | 748 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 9 | 8.5 | 8.1 |
| 11/14/2017 | 1131 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 4.4 | 5.3 | 4.3 |
| | | Background | 7.3 | 6 | 7.5 |
| 11/15/2017 | 558 | Inside Curtain | 1.2 | 1.1 | 1.1 |
| | | Outside Curtain | 0 | 0.1 | 0 |
| | | Background | 0.1 | 0 | 0 |
| 11/16/2017 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 11/17/2017 | 2243 | Inside Curtain | 0 | 2.5 | 2.7 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 11/18/2017 | 1134 | Inside Curtain | 9.8 | 8.6 | 5.6 |
| | | Outside Curtain | 0 | 0 | 0.2 |
| | | Background | 0 | 0 | 0 |
| 11/20/2017 | 847 | Inside Curtain | 5.7 | 6.2 | 3.4 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 11/21/2017 | 1845 | Inside Curtain | 4 | 4 | 4.2 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 11/22/2017 | 1034 | Inside Curtain | 2.9 | 4.1 | 1.9 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 11/27/2017 | 1131 | Inside Curtain | 11.9 | 14 | 14.5 |
| | | Outside Curtain | 0.9 | 6.4 | 6.5 |
| | | Background | 0 | 0.1 | 0 |
| 11/28/2017 | 2038 | Inside Curtain | 1.5 | 1.6 | 4.4 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 11/29/2017 | 921 | Inside Curtain | 8 | 9.3 | 5.2 |
| | | Outside Curtain | 0 | 1.3 | 0 |
| | | Background | 0 | 0 | 0 |
| 11/30/2017 | 1130 | Inside Curtain | 1.8 | 2.7 | 3.7 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/1/2017 | 737 | Inside Curtain | 0.3 | 0 | 1.2 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/2/2017 | 919 | Inside Curtain | 4.3 | 5.2 | 4.8 |
| | | Outside Curtain | 1.8 | 2.6 | 1.2 |
| | | Background | 0 | 0 | 0 |
| 12/3/2017 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 12/4/2017 | 1017 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/5/2017 | 1122 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/6/2017 | 1911 | Inside Curtain | 28.1 | 19.8 | 14.7 |
| | | Outside Curtain | 9.2 | 5.6 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/7/2017 | 1128 | Inside Curtain | 0.3 | 2.7 | 0.6 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/8/2017 | 1836 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/11/2017 | 1850 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/12/2017 | 1521 | Inside Curtain | 5.3 | 7.2 | 6.1 |
| | | Outside Curtain | 0 | 0 | 2.2 |
| | | Background | 0 | 0 | 0 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 12/13/2017 | 1927 | Inside Curtain | 11.1 | 11.9 | 13.2 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/14/2017 | 1217 | Inside Curtain | 2.2 | 1.4 | 1.3 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/15/2017 | 1510 | Inside Curtain | 10.1 | 23.1 | 22.1 |
| | | Outside Curtain | 1.1 | 0.5 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/16/2017 | 857 | Inside Curtain | 26.6 | 21.4 | 26.4 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/19/2017 | 1023 | Inside Curtain | 14.9 | 16.3 | 10.2 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/20/2017 | 1003 | Inside Curtain | 14.6 | 12.9 | 11.7 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/21/2017 | 1127 | Inside Curtain | 7.7 | 5.7 | 4.7 |
| | | Outside Curtain | 0.6 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/22/2017 | 1045 | Inside Curtain | 2.1 | 7.5 | 16.1 |
| | | Outside Curtain | 0.1 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/26/2017 | 836 | Inside Curtain | 35.5 | 36.1 | 28.1 |
| | | Outside Curtain | 2.2 | 4.5 | 6 |
| | | Background | 0 | 0.1 | 0.1 |
| 12/27/2017 | 1142 | Inside Curtain | 6.7 | 19.1 | 20.9 |
| | | Outside Curtain | 0 | 0 | 10.7 |
| | | Background | 0 | 0 | 0 |
| 12/28/2017 | 937 | Inside Curtain | 7.6 | 6.9 | 6.3 |
| | | Outside Curtain | 4.6 | 4.9 | 4.1 |
| | | Background | 0 | 0 | 0 |
| 12/29/2017 | 851 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 12/30/2017 | 840 | Inside Curtain | 4.3 | 2.5 | 1.3 |
| | | Outside Curtain | 1.4 | 0.8 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/2/2018 | 1558 | Inside Curtain | 8.1 | 12 | 12.1 |
| | | Outside Curtain | 4 | 4 | 4.1 |
| | | Background | 0 | 0 | 1.2 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 1/3/2018 | 1037 | Inside Curtain | 6.8 | 3.4 | 3.1 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/5/2018 | 1133 | Inside Curtain | 4 | 4.4 | 4 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/8/2018 | 1210 | Inside Curtain | 3.9 | 9.6 | 11.1 |
| | | Outside Curtain | 6 | 14.6 | 16.4 |
| | | Background | 0 | 0 | 0 |
| 1/9/2018 | 2333 | Inside Curtain | 6 | 5.4 | 5.9 |
| | | Outside Curtain | 2.7 | 3.1 | 2.6 |
| | | Background | 0 | 0 | 0 |
| 1/10/2018 | 1228 | Inside Curtain | 0 | 0 | 0.1 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/11/2018 | 1655 | Inside Curtain | 22 | 21.7 | 15.2 |
| | | Outside Curtain | 5.5 | 5.4 | 2.2 |
| | | Background | 0 | 1.1 | 1 |
| 1/12/2018 | 1144 | Inside Curtain | 4.6 | 2.9 | 1.7 |
| | | Outside Curtain | 3 | 10.3 | 6.6 |
| | | Background | 0 | 0 | 0 |
| 1/13/2018 | 0942 | Inside Curtain | 21.5 | 20 | 11.2 |
| | | Outside Curtain | 15.4 | 12.3 | 11.2 |
| | | Background | 13.5 | 12.7 | 12.9 |
| 1/14/2018 | 1122 | Inside Curtain | 1.7 | 0.7 | 0 |
| | | Outside Curtain | 0.2 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/15/2018 | 1631 | Inside Curtain | 14.8 | 19.2 | 23.4 |
| | | Outside Curtain | 6 | 3.7 | 2.1 |
| | | Background | 0 | 0 | 0 |
| 1/16/2018 | 1206 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/17/2018 | 1150 | Inside Curtain | 7 | 13.6 | 20.8 |
| | | Outside Curtain | 3.9 | 10.6 | 17.4 |
| | | Background | 0 | 0.2 | 0 |
| 1/18/2018 | 1600 | Inside Curtain | 14 | 13.2 | 16.1 |
| | | Outside Curtain | 5 | 5 | 5 |
| | | Background | 0 | 0.2 | 0 |
| 1/19/2018 | 2309 | Inside Curtain | 9.2 | 8.8 | 7.6 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 1/20/2018 | 1714 | Inside Curtain | 4.5 | 5.7 | 8.1 |
| | | Outside Curtain | 1.1 | 1.4 | 0.9 |
| | | Background | 0 | 0 | 0 |
| 1/21/2018 | 1330 | Inside Curtain | 8.2 | 8.6 | 8.7 |
| | | Outside Curtain | 4.4 | 4.1 | 4.9 |
| | | Background | 0 | 0 | 0 |
| 1/22/2018 | 1559 | Inside Curtain | 1.1 | 0.2 | 0.6 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 1/23/2018 | 1514 | Inside Curtain | 22.6 | 16.8 | 3.5 |
| | | Outside Curtain | 23.5 | 15.4 | 0 |
| | | Background | 7.7 | 3.9 | 6.2 |
| 1/24/2018 | 1234 | Inside Curtain | 34.2 | 34.8 | 39 |
| | | Outside Curtain | 4.4 | 5.4 | 5.5 |
| | | Background | 2 | 2.1 | 0 |
| 1/25/2018 | 1340 | Inside Curtain | 22.2 | 23.1 | 26.5 |
| | | Outside Curtain | 3.1 | 4.1 | 3.9 |
| | | Background | 1.1 | 1 | 0.1 |
| 1/26/2018 | 1835 | Inside Curtain | 2.2 | 12.3 | 16.4 |
| | | Outside Curtain | 11.2 | 12.2 | 12.2 |
| | | Background | 1.5 | 1.4 | 0.7 |
| 1/27/2018 | 1807 | Inside Curtain | 19.5 | 19.4 | 18.5 |
| | | Outside Curtain | 13.5 | 15.4 | 16.7 |
| | | Background | 0.5 | 0.9 | 1.2 |
| 1/28/2018 | 1143 | Inside Curtain | 25.1 | 20.6 | 18.6 |
| | | Outside Curtain | 17.7 | 16 | 17.8 |
| | | Background | 1.5 | 1.3 | 0.5 |
| 1/29/2018 | 1516 | Inside Curtain | 12.6 | 23.1 | 52.2 |
| | | Outside Curtain | 4.1 | 11 | 18.2 |
| | | Background | 3.6 | 1.4 | 0 |
| 1/30/2018 | 1017 | Inside Curtain | 28.2 | 36.6 | 38.8 |
| | | Outside Curtain | 36.2 | 39.6 | 31.5 |
| | | Background | 11.8 | 14.3 | 19.2 |
| 1/31/2018 | 2051 | Inside Curtain | 36.2 | 39.6 | 31.5 |
| | | Outside Curtain | 17.6 | 16.5 | 16.9 |
| | | Background | 0.5 | 1.1 | 0.9 |
| 2/1/2018 | 0855 | Inside Curtain | 22.2 | 25.0 | 25.1 |
| | | Outside Curtain | 12.5 | 13.9 | 12.9 |
| | | Background | 1.0 | 2.0 | 0.0 |
| 2/2/2018 | 2229 | Inside Curtain | 24.8 | 21.8 | 17.8 |
| | | Outside Curtain | 15 | 7.4 | 4.4 |
| | | Background | 2.7 | 0.1 | 2.0 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 2/3/2018 | 1620 | Inside Curtain | 21.2 | 21 | 34.2 |
| | | Outside Curtain | 12 | 12 | 12.5 |
| | | Background | 1.2 | 0 | 0 |
| 2/4/2018 | 0958 | Inside Curtain | 23.7 | 25.7 | 22.1 |
| | | Outside Curtain | 5.4 | 4.4 | 9.6 |
| | | Background | 3.3 | 7.4 | 12.5 |
| 2/5/2018 | 0958 | Inside Curtain | 12.1 | 10.7 | 11 |
| | | Outside Curtain | 4.1 | 3.9 | 3.4 |
| | | Background | 5.9 | 6.6 | 2.7 |
| 2/6/2018 | 1535 | Inside Curtain | 8.6 | 7.8 | 3.7 |
| | | Outside Curtain | 0.5 | 0.3 | 0 |
| | | Background | 2.4 | 2.7 | 1.3 |
| 2/7/2018 | 1814 | Inside Curtain | 8.4 | 9.1 | 8.8 |
| | | Outside Curtain | 4.6 | 7.2 | 9.2 |
| | | Background | 0 | 0 | 0 |
| 2/8/2018 | 1301 | Inside Curtain | 15.1 | 18.2 | 20.2 |
| | | Outside Curtain | 4.5 | 4.6 | 4 |
| | | Background | 1.5 | 0 | 0 |
| 2/9/2018 | 0448 | Inside Curtain | 15.1 | 11 | 27.5 |
| | | Outside Curtain | 2.1 | 3.8 | 2.2 |
| | | Background | 3.9 | 4.4 | 3.8 |
| 2/10/2018 | 1115 | Inside Curtain | 33.3 | 35.7 | 41.1 |
| | | Outside Curtain | 11.1 | 5 | 5.5 |
| | | Background | 0 | 0 | 0 |
| 2/11/2018 | 0807 | Inside Curtain | 4.7 | 3 | 0.7 |
| | | Outside Curtain | 0.3 | 0.2 | 0 |
| | | Background | 1.1 | 1.2 | 2.9 |
| 2/12/2018 | 0807 | Inside Curtain | 4.7 | 3 | 0.7 |
| | | Outside Curtain | 0.3 | 0.2 | 0 |
| | | Background | 1.1 | 1.2 | 2.9 |
| 2/13/2018 | 1334 | Inside Curtain | 5.2 | 7.0 | 8.1 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 2/14/2018 | 1954 | Inside Curtain | 6.8 | 7.1 | 6.5 |
| | | Outside Curtain | 2.3 | 1.1 | 0.9 |
| | | Background | 0.4 | 0 | 0 |
| 2/15/2018 | 1406 | Inside Curtain | 12.5 | 13.9 | 15.5 |
| | | Outside Curtain | 2.0 | 1 | 0.6 |
| | | Background | 0 | 0 | 0 |
| 2/16/2018 | 1330 | Inside Curtain | 5.8 | 7.2 | 6.6 |
| | | Outside Curtain | 1.5 | 3.5 | 2.7 |
| | | Background | 0.3 | 0.5 | 0.8 |

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 2/17/2018 | 1330 | Inside Curtain | 8 | 11.2 | 12.7 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 5.6 | 2.8 | 0 |
| 2/18/2018 | 0209 | Inside Curtain | 12.9 | 12.3 | 3 |
| | | Outside Curtain | 8.4 | 7 | 5.5 |
| | | Background | 0.6 | 0 | 1.6 |
| 2/19/2018 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 2/20/2018 | 1210 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 2/21/2018 | 2021 | Inside Curtain | 10.4 | 11.3 | 9.5 |
| | | Outside Curtain | 9.4 | 9 | 8.3 |
| | | Background | 1.3 | 0 | 0 |
| 2/22/2018 | 2045 | Inside Curtain | 13.3 | 11.3 | 9.07 |
| | | Outside Curtain | 6.7 | 7.8 | 5.3 |
| | | Background | 0.8 | 0 | 0 |
| 2/23/2018 | 1015 | Inside Curtain | 5.5 | 6.2 | 10.0 |
| | | Outside Curtain | 2.2 | 3.0 | 3.1 |
| | | Background | 0.0 | 0.0 | 0.0 |
| 2/24/2018 | 1510 | Inside Curtain | 2 | 1.8 | 2.3 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 2/25/2018 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 2/26/2018 | 1845 | Inside Curtain | 12.3 | 11.8 | 10.4 |
| | | Outside Curtain | 8.2 | 6.5 | 5.8 |
| | | Background | 0 | 0 | 0 |
| 2/27/2018 | 1019 | Inside Curtain | 4.1 | 3.2 | 1.9 |
| | | Outside Curtain | 1.7 | 1.2 | 2.5 |
| | | Background | 0 | 0 | 0 |
| 2/28/2018 | 0928 | Inside Curtain | 9.3 | 8.9 | 8.2 |
| | | Outside Curtain | 4.3 | 4.2 | 4.2 |
| | | Background | 0 | 0 | 0 |
| 3/1/2018 | 1527 | Inside Curtain | 10.7 | 11.3 | 9.8 |
| | | Outside Curtain | 5.1 | 3.2 | 2.5 |
| | | Background | 1 | 1 | 0.8 |
| 3/2/2018 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 3/3/2018 | 2320 | Inside Curtain | 9.9 | 9.8 | 10.1 |
| | | Outside Curtain | 3.5 | 6.1 | 5.1 |
| | | Background | 0.2 | 0 | 0.1 |
| 3/4/2018 | 1036 | Inside Curtain | 2.2 | 3.1 | 4.5 |
| | | Outside Curtain | 1 | 2.1 | 1.5 |
| | | Background | 0 | 0 | 0.1 |
| 3/5/2018 | 1100 | Inside Curtain | 2.2 | 2.6 | 1.8 |
| | | Outside Curtain | 1.3 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 3/6/2018 | 0801 | Inside Curtain | 2.5 | 2.3 | 1.5 |
| | | Outside Curtain | 1.2 | 0.5 | 0 |
| | | Background | 0 | 0 | 0 |
| 3/7/2018 | 0949 | Inside Curtain | 0.0 | 0.0 | 0.0 |
| | | Outside Curtain | 0.0 | 0.0 | 0.0 |
| | | Background | 0.0 | 0.0 | 0.0 |
| 3/8/2018 | 1104 | Inside Curtain | 0.1 | 0.0 | 0.0 |
| | | Outside Curtain | 0.0 | 0.0 | 0.0 |
| | | Background | 0.0 | 0.0 | 0.0 |
| 3/9/2018 | 0832 | Inside Curtain | 0.0 | 0.2 | 0.0 |
| | | Outside Curtain | 0.0 | 0.0 | 0.0 |
| | | Background | 0.0 | 0.0 | 0.0 |
| 3/10/2018 | 0515 | Inside Curtain | 10.7 | 0.1 | 0 |
| | | Outside Curtain | 7.7 | 7.4 | 0.6 |
| | | Background | 0.7 | 0 | 0 |
| 3/11/2018 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 3/12/2018 | 1014 | Inside Curtain | 1.4 | 1.5 | 1 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 3/13/2018 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 3/14/2018 | 1209 | Inside Curtain | 0.4 | 1.4 | 2.1 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 3/15/2018 | 1145 | Inside Curtain | 0.7 | 0.0 | 0.0 |
| | | Outside Curtain | 0.0 | 0.0 | 0.0 |
| | | Background | 0.0 | 0.0 | 0.0 |
| 3/16/2018 | 1409 | Inside Curtain | 0.3 | 1.2 | 2.2 |
| | | Outside Curtain | 0.0 | 0.1 | 0.2 |
| | | Background | 0.0 | 0.0 | 0.0 |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-1**
**Daily Turbidity Readings**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Date | Time | Area | Surface (NTU) | Mid-Depth (NTU) | Full Depth (NTU) |
|---|---|---|---|---|---|
| 3/17/2018 | 1730 | Inside Curtain | 0.5 | 0.1 | 0.1 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |
| 3/18/2018 | None | Inside Curtain | N/A | N/A | N/A |
| | | Outside Curtain | N/A | N/A | N/A |
| | | Background | N/A | N/A | N/A |
| 3/19/2018 | 1600 | Inside Curtain | 1.3 | 1.1 | 0.8 |
| | | Outside Curtain | 0.1 | 0.2 | 0 |
| | | Background | 0 | 0 | 0 |
| 3/20/2018 | 0720 | Inside Curtain | 0 | 0 | 0 |
| | | Outside Curtain | 0 | 0 | 0 |
| | | Background | 0 | 0 | 0 |

Notes:
N/A = Not Applicable. No turbidity readings were taken on a specific day.

**Table 3-2**
**Turbidity Protocol for Opening the Turbidity Curtain**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| ITEM | OPERATION | BACKGROUND (BG) L OCATION | TEST LOCATION | <50 NTU inside curtain | >50 NTU inside but <50 NTU from BG | >50 NTU inside but <100 NTU from BG | >100 NTU from BG | >100 NTU from BG REPEAT |
|---|---|---|---|---|---|---|---|---|
| 1 | **Curtain Opening (work ongoing)** | Obtain daily background water quality if reading has not been collected. | mid-depth, 10ft inside curtain | OK TO PROCEED | OK TO PROCEED | OK TO PROCEED during incoming tide.<br><br>DO NOT OPEN during outgoing tide.<br><br>NOTIFY superintendent | DO NOT OPEN<br><br>RE-TEST turbidity.<br><br>NOTIFY superintendent and Wood inspector | DO NOT OPEN AND CEASE OPERATIONS<br><br>RE- TEST turbidity every 15 minutes until levels are acceptable.<br><br>NOTIFY superintendent and Wood inspector |
| 2 | **Curtain Opening (non-work)** | Obtain daily background water quality if reading has not been collected. | mid-depth, 10ft inside curtain | OK TO PROCEED | OK TO PROCEED | OK TO PROCEED during incoming tide.<br><br>DO NOT OPEN during outgoing tide.<br><br>NOTIFY superintendent. | DO NOT OPEN<br><br>RE-TEST turbidity.<br><br>IDENTIFY source of turbidity.<br><br>NOTIFY superintendent and Wood inspector. | DO NOT OPEN<br><br>RE-TEST turbidity every 15 minutes until levels are acceptable.<br><br>IDENTIFY source of turbidity.<br><br>NOTIFY superintendent and Wood inspector. |
| 3 | **Visible plume outside curtain** | Obtain daily background water quality if reading has not been collected. | mid-depth, 10ft inside curtain | OK TO PROCEED<br><br>INSPECT turbidity curtain and repair as needed.<br><br>NOTIFY superintendent. | OK TO PROCEED<br><br>INSPECT turbidity curtain and repair as needed.<br><br>NOTIFY superintendent. | OK TO PROCEED during incoming tide.<br><br>DO NOT OPEN during outgoing tide.<br><br>INSPECT turbidity curtain and repair as needed.<br><br>NOTIFY superintendent and Wood inspector. | DO NOT OPEN AND CEASE OPERATIONS<br><br>INSPECT turbidity curtain and repair as needed.<br><br>IDENTIFY source of turbidity. If source is from site operations, wait for plume to subside prior to resuming work and modify operations when resumed.<br><br>RE-TEST turbidity.<br><br>NOTIFY superintendent, Wood inspector, and Wynn. | DO NOT OPEN AND CEASE OPERATIONS<br><br>INSPECT turbidity curtain and repair as needed.<br><br>IDENTIFY source of turbidity. If source is from site operations, wait for plume to subside prior to resuming work and modify operations when resumed.<br><br>RE-TEST turbidity every 15 minutes until levels are acceptable.<br><br>NOTIFY superintendent, Wood inspector, and Wynn. |

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-3**
**Water Treatment System Effluent Summary**
**Phase IV As-Built Construction and Final Inspection Report**
**RTN 3-13341**

| Parameter | Criteria | Source of Criteria | 10/18/2017 | 10/25/2017 | 11/1/2017 | 11/9/2017 | 11/15/2017 | 12/13/2017 | 1/11/2018 | 2/14/2018 |
|---|---|---|---|---|---|---|---|---|---|---|
| Dissolved Arsenic | 36 ug/L | NRWQC (SW) | 9 | <25 | <25 | <5 | NA | <5 | <50 | <25 |
| Dissolved Lead | 8.1 ug/L | NRWQC (SW) | <5 | 11.7 | <5 | <5 | <5 | <1 | <40 | <1 |
| Dissolved Mercury | 0.94 ug/L | NRWQC (SW) | <0.20 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| Dissolved Vanadium | 160 ug/L | chronic (Birge, 1978) | <20 | <10 | <100 | <20 | <20 | <20 | <20 | <20 |
| PCBs | 0.03 ug/L | NRWQC (SW) | <0.05 | <0.05 | <0.10 | <0.09 | <0.09 | <0.09 | <0.10 | <0.10 |
| EPH Fractions | | | | | | | | | | |
| C9-C18 aliphatics | 1800 mg/L | MassDEP EPH/VPH Guidance | <0.093 | <0.093 | <0.094 | <0.093 | <0.093 | <0.102 | <0.096 | <0.100 |
| C19-C36 aliphatics | 2,100 mg/L | | <0.093 | <0.093 | <0.94 | <0.093 | <0.093 | <0.102 | <0.096 | <0.100 |
| C11-C22 aromatics | Monitor only | | <0.0935 | <0.0935 | <0.943 | <0.0935 | <0.0935 | <0.102 | <0.0962 | <0.100 |
| bis(2-ethylhexyl)phthalate | 160 ug/L | Chronic LOEC (Rhodes et al., 1995) | 11.3 | <5.6 | <6 | 7.1 | NA | <5.8 | <5.9 | <5.8 |
| pH | 6.5 to 8.5 S.U. | Mass SWQC | 8.26 | 7.9 | 7.91 | 8.07 | 7.91 | 7.74 | 7.8 | 7.82 |
| TSS | Monitor only | | 22 | 27 | 36 | 13 | 43 | 30 | 27 | 48 |

NRWQC = National Recommended Water Quality Criteria
NA = Not analyzed due to sampler error.

Prepared by: John Rice
Checked by: Matt Grove

**Table 3-4**
**Cap Material Specifications**
**Phase IV As-Builts Construction and Final Inspection Report**
**RTN 3-13341**

| TYPE A SAND SIEVE ANALYSIS (% PASSING) | | | | |
|---|---|---|---|---|
| | Sieve Opening Size | | | |
| **TYPE A – COARSE SAND** | **#8** | **#10** | **#20** | **#200** |
| Original Specification | 100 | 68-88 | 6-26 | 0-10 |
| Revised Specification | 75 | 63-88 | 6-48 | 0-10 |

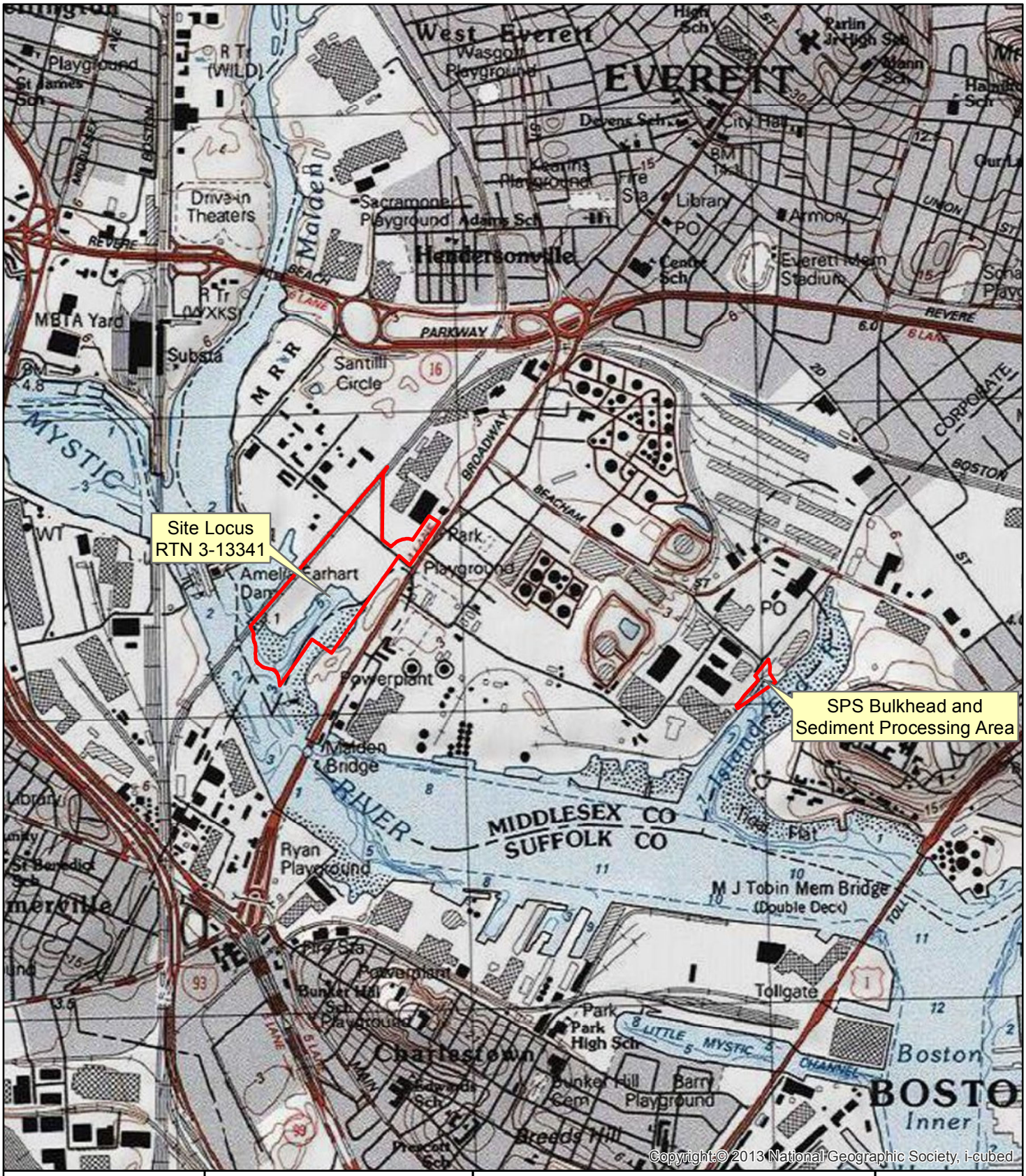
| TYPE B SAND SIEVE ANALYSIS (% PASSING) | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Sieve Opening Size | | | | | | |
| **TYPE B – GRAVEL** | **1"** | **1/2"** | **3/8"** | **#4** | **#30** | **#50** | **#200** |
| Original Specification | 100 | --- | 68-88 | 6-26 | --- | --- | 0-10 |
| Revised Specification | 100 | 50-85 | --- | 40-75 | 18 | 8-28 | 0-10 |

| TYPE C SAND SIEVE ANALYSIS (% PASSING) | | | | | |
|---|---|---|---|---|---|
| | Sieve Opening Size | | | | |
| **TYPE C – SILTY SAND** | **#4** | **#10** | **#10** | **#40** | **#200** |
| Original Specification | 95-100 | 90-95 | --- | --- | 50-60 |
| Revised Specification | 95-100 | 92.6 | 90-95 | 75-90 | 50-60 |

| TYPE MA BLENDED SAND SIEVE ANALYSIS (% PASSING) | | | | | |
|---|---|---|---|---|---|
| | Sieve Opening Size | | | | |
| **TYPE MA – BLENDED SAND** | **1/2"** | **#8** | **#10** | **#20** | **#200** |
| Original Type A Specification | --- | 100 | 68-88 | 6-26 | 0-10 |
| Blended Sand Specification | 100 | 40-55 | 35-55 | 6-26 | 0-10 |

Prepared by: John Rice
Checked by: Matt Grove

# FIGURES




amec foster wheeler

Former Everett Staging Yard

One Broadway, Everett, MA
RTN 3-13341

# Site Location Map

| SCALE: | DATE: | PROJECT: |
|---|---|---|
| 1 inch = 2,000 feet | 09/06/18 | 3651160042 |

DRAWN BY: E. Gardiner | CHECKED BY: J. Rice

LOCATION:
P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig1-1_Sed_SiteLocus.mxd

FIGURE NO:
**1-1**

Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG

amec foster wheeler

**Legend**

- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- Remediation Area
- Salt Marsh
- Deteriorated Barge
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88)

N

0 120 240 Feet

**Pre-Remediation Site Plan**

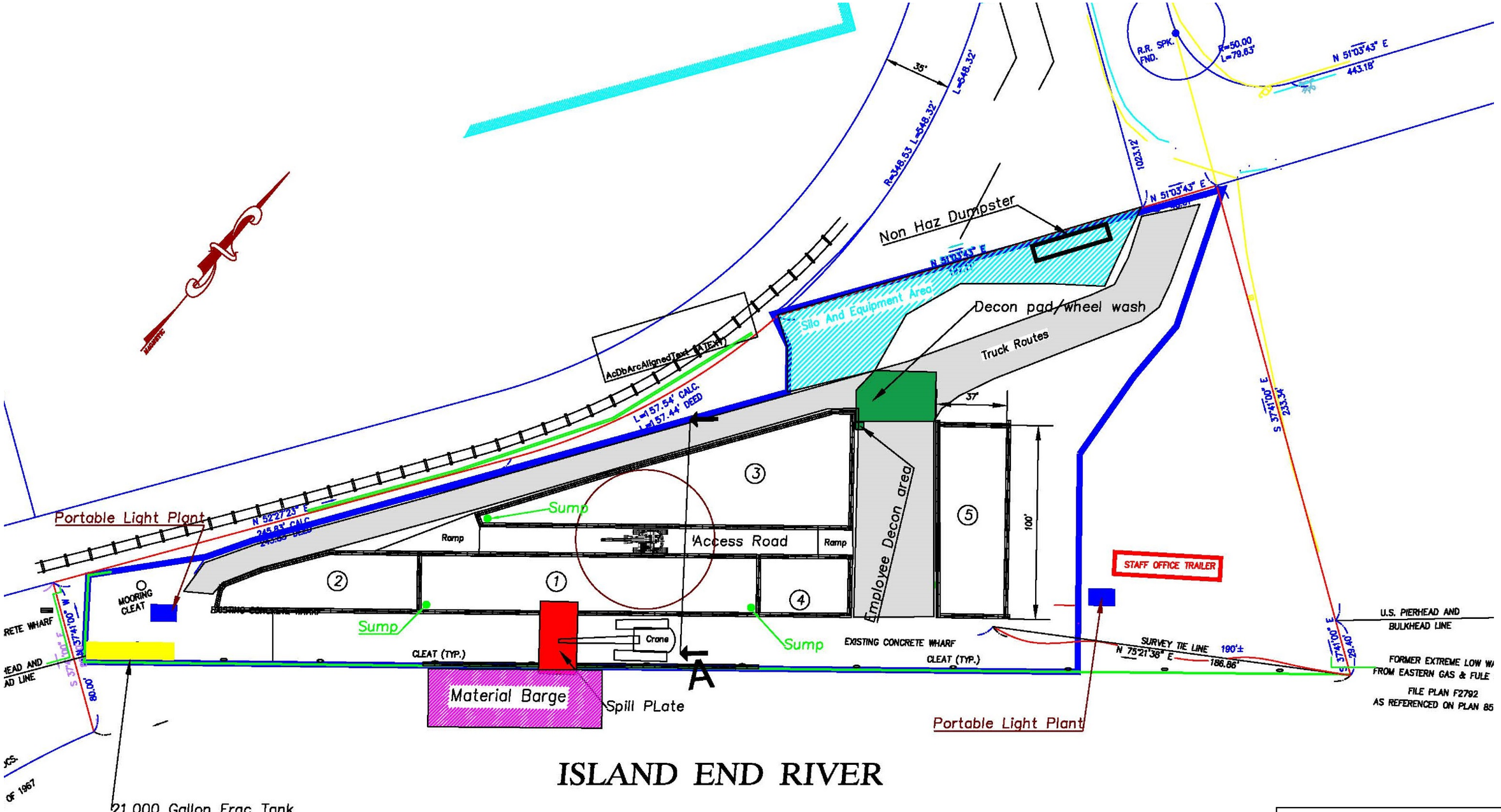
**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 11/1/2018 |

FIGURE NO:

**1-2**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig1-2_Sed_SitePlan.mxd




Source:
Figure created by Charter Environmental (titled SPS Bulkhead Mixing Big Layout), dated 09/14/2017.

amec foster wheeler

NOTE: NOT TO SCALE

**Sediment Processing Area**

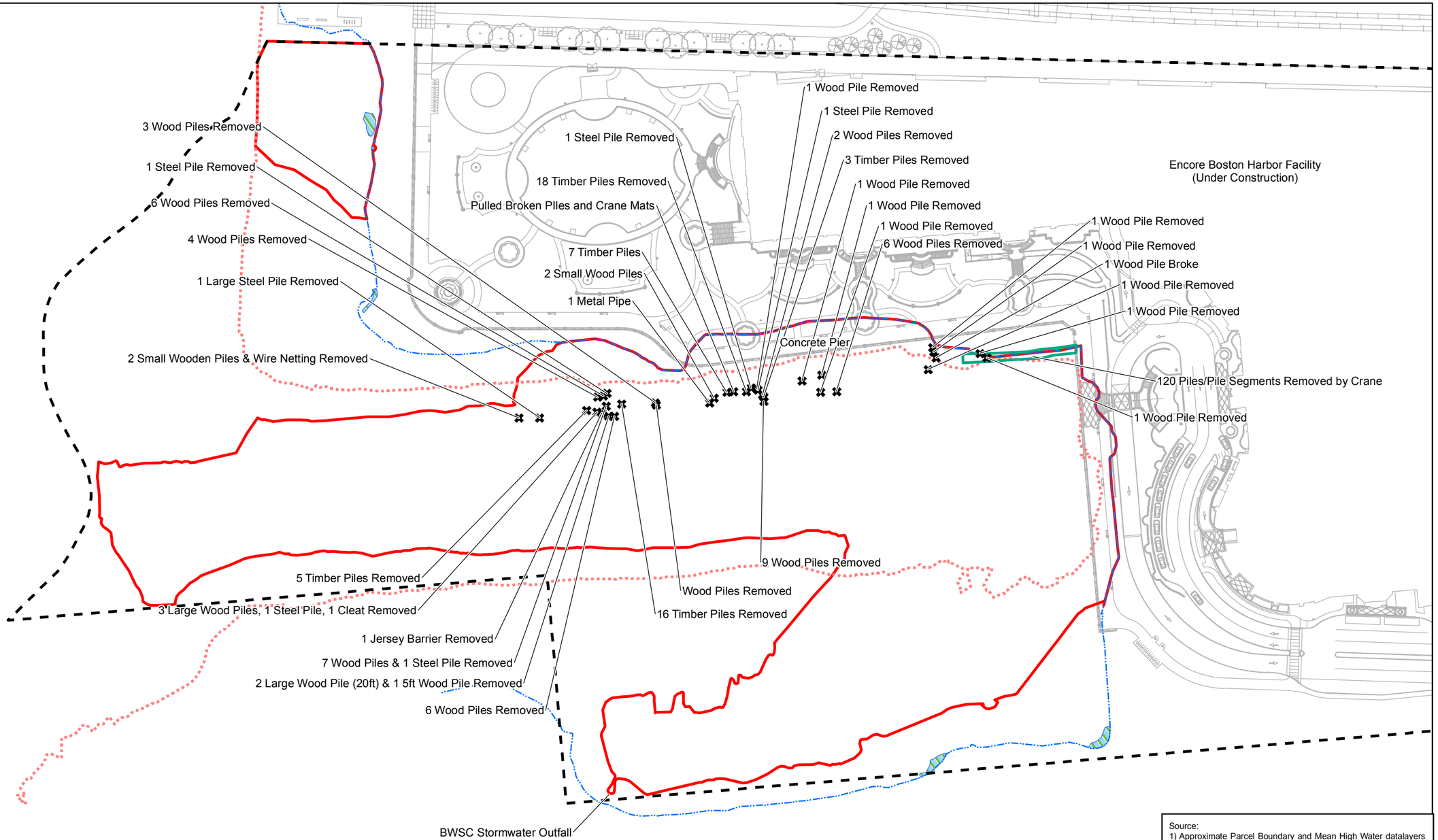
**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 9/4/2018 |

FIGURE NO:

**3-1**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-1_Sed_SedimentProcessingArea.mxd




Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG
2) Piling Locations approximated based drawing provided by Charter Environmental entitled "Debris Removal As-Built" Dated 02-01-2018.

amec foster wheeler

**Legend**

- Piling Locations
- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- 120 Piles/Pile Segments Removed by Crane
- Salt Marsh
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88)

N

0 120 240 Feet

**Piling Locations**

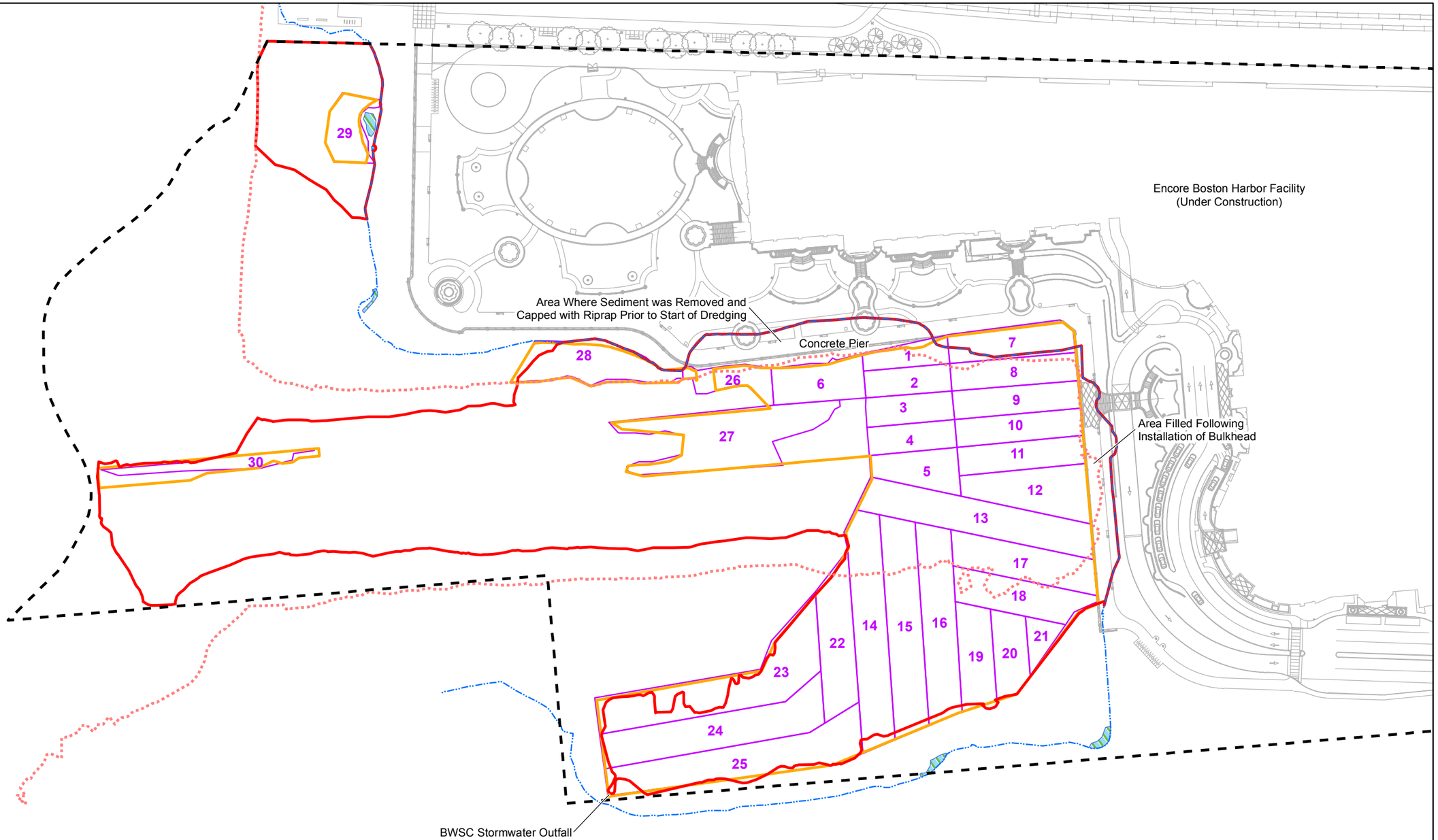
**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 9/4/2018 |

FIGURE NO:

**3-2**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-2_PilingLocations.mxd




Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG

amec foster wheeler

**Legend**

- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- Salt Marsh
- Dredge Limits
- Dredge Cell
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88

N

0 120 240 Feet

**Sediment Dredge Cell Layout**

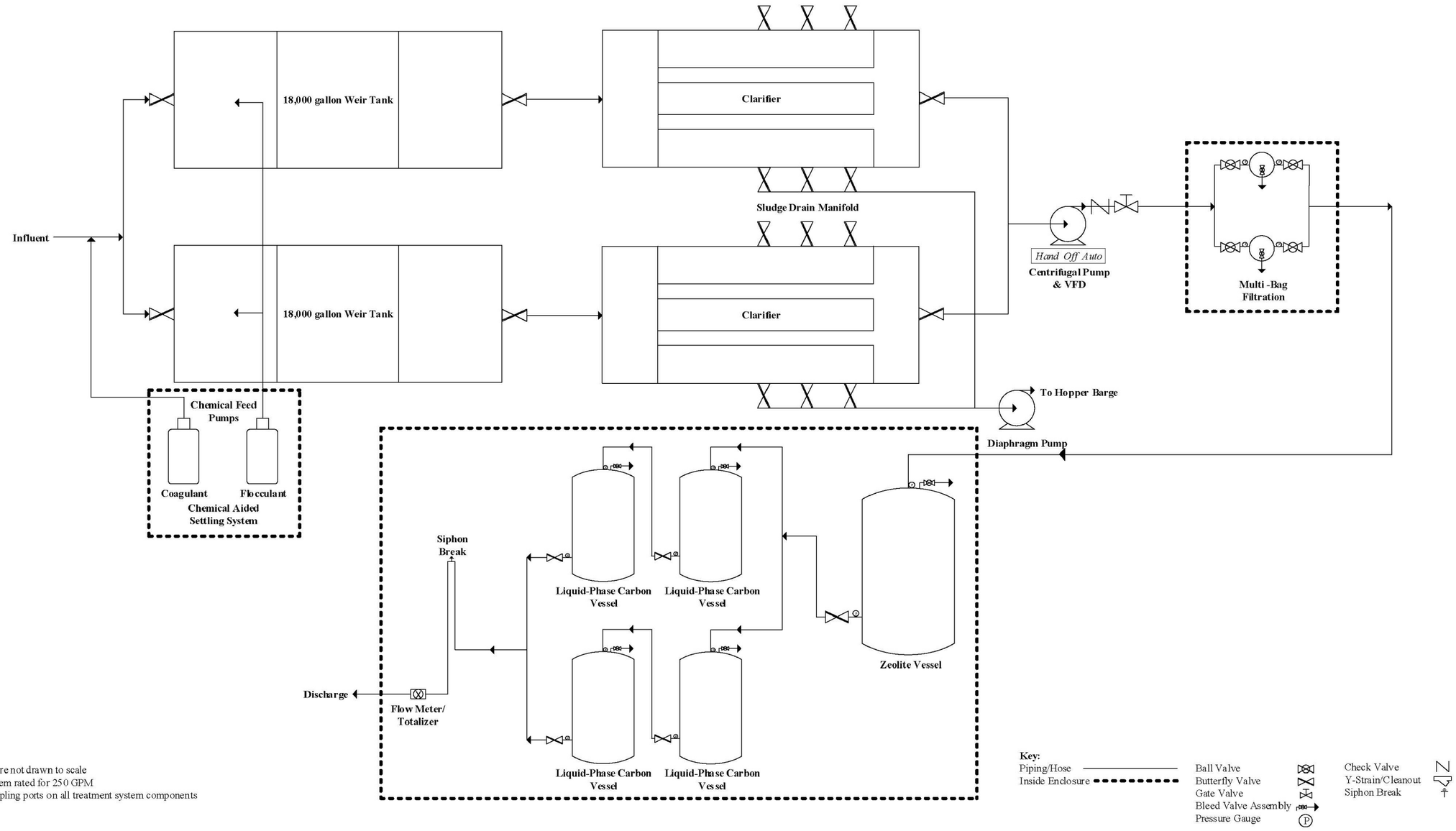
**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 9/6/2018 |

FIGURE NO:

**3-3**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-3_SedimentDredgeCellLayout.mxd




**Notes:**
1. Figure not drawn to scale
2. System rated for 250 GPM
3. Sampling ports on all treatment system components

Source:
Figure created by Lockwood Remediation Technologies, LLC (titled Water Treatment Facilities), not dated.

amec foster wheeler

NOTE: NOT TO SCALE

**Water Treatment System Schematic**

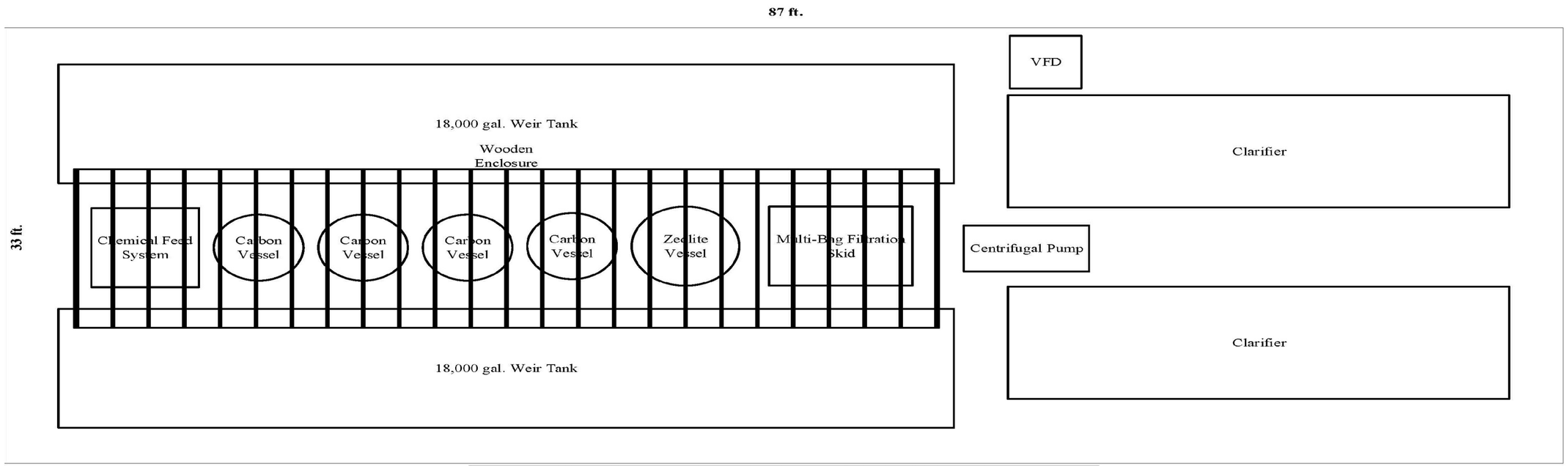
**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 9/4/2018 |

FIGURE NO:

**3-4**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-4_WaterTreatment SystemSchematic.mxd




**Water Treatment System Equipment Weights & Dimensions**

**Wynn Casino Dredge**

| *Equipment* | *Quantity* | *Total Dry Weight (lbs.)* | *Total Wet Weight (lbs.)* | *Dimensions* |
|---|---|---|---|---|
| 18,000 gal. Weir Tank | 2 | 60,000 | 360,000 | 50' x 9' |
| Clarifier | 2 | 24,000 | 190,000 | 28' x 8.5' |
| Chemical Feed System | 1 | 200 | 2,500 | 6' x 6' |
| Multi Bag Filter Skid | 1 | 2,000 | 3,500 | 6' x 8' |
| Zeolite Vessel - 10,000 lbs. of Media | 1 | 13,000 | 21,000 | 6' dia. |
| Liquid Carbon Vessel - 3,000 lbs. of Media | 4 | 26,000 | 40,000 | 5' dia. |
| Centrifugal Pump & VFD | 1 | 1,000 | 1,500 | 7' x 3.5' |
| Variable Frequncy Drive (VFD) | 1 | 300 | 300 | 4' x 4' |
| Wooden Enclosure | 1 | 5,000 | 5,000 | 45'x12' |
| | **TOTAL** | **131,500** | **623,800** | |

0 ft. 3 ft. 5 ft. 10 ft.

Source:
Figure created by Lockwood Remediation Technologies, LLC (titled Water Treatment System Layout), not dated.

amec foster wheeler

NOTE: NOT TO SCALE

**Water Treatment System Layout**

**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

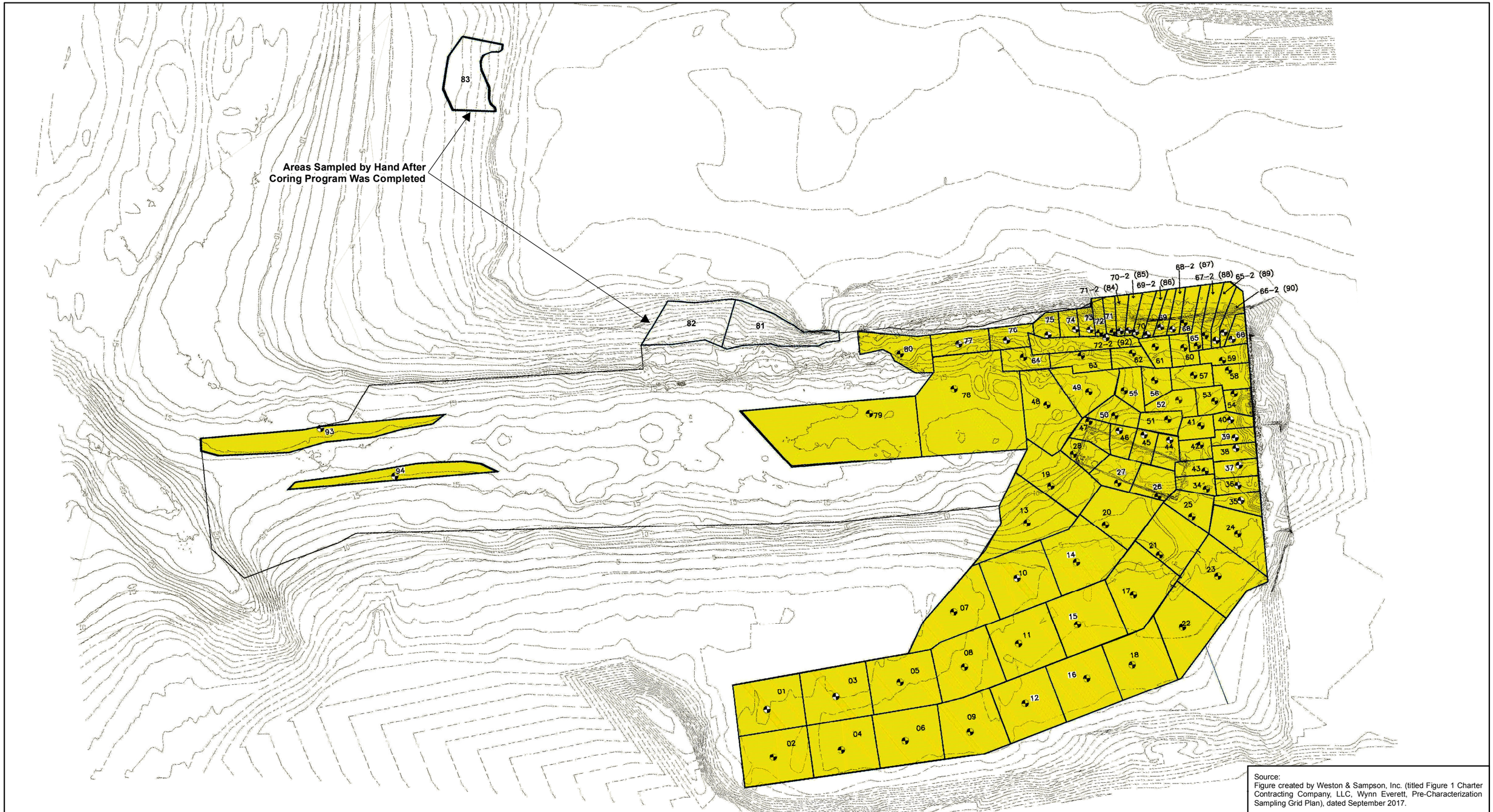
Drawn By: E. Gardiner | Checked By: J. Rice

Project Number: 3651160042.003 | Date: 9/4/2018

FIGURE NO:

**3-5**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-5_WaterTreatment SystemLayout.mxd




Source:
Figure created by Weston & Sampson, Inc. (titled Figure 1 Charter Contracting Company, LLC, Wynn Everett, Pre-Characterization Sampling Grid Plan), dated September 2017.

amec foster wheeler

**Legend**

Sediment Cell Area

Sediment Core Location

N

0 120 240 Feet

**Pre-Characterization Sampling Locations**

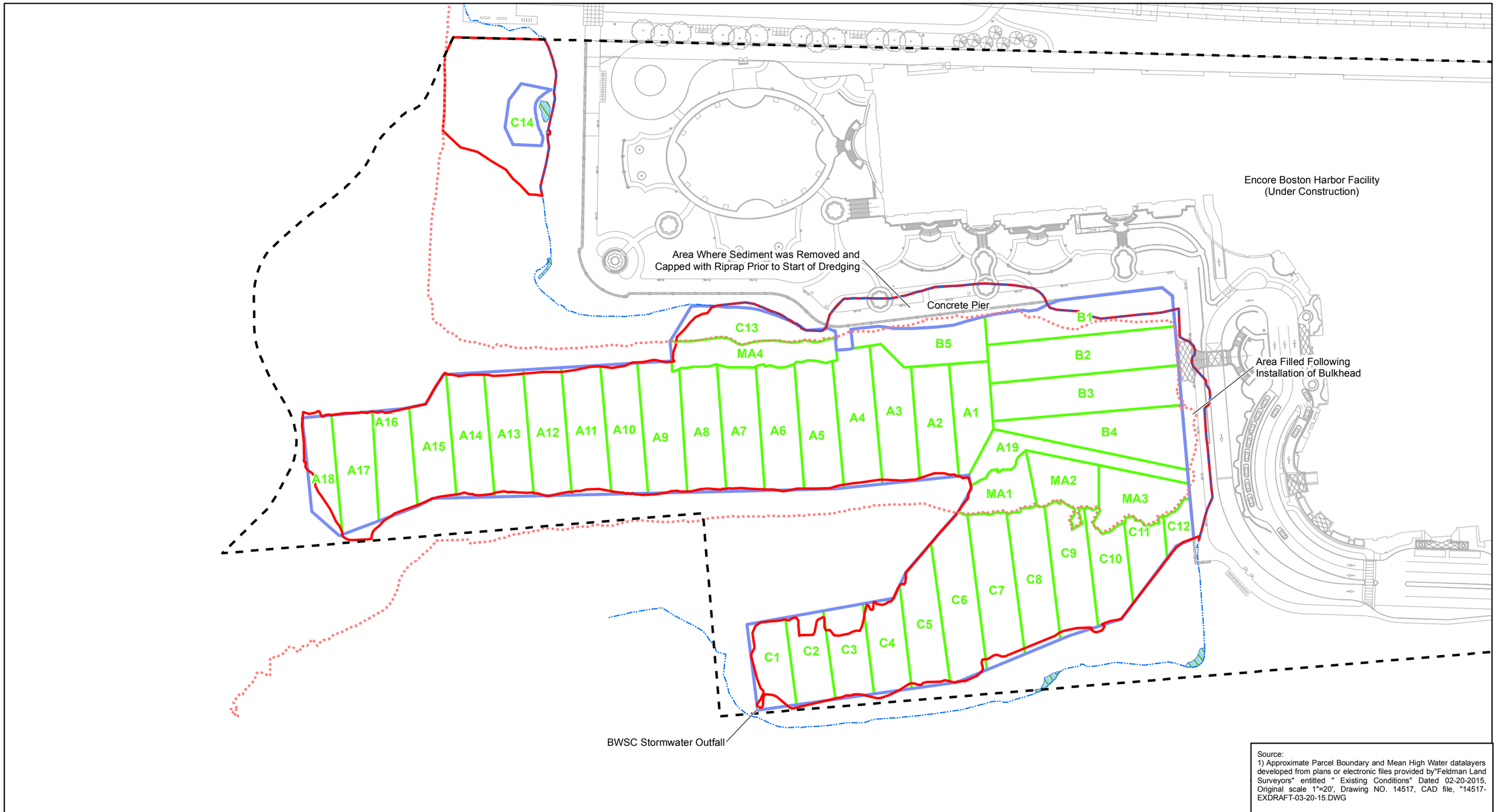
**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 10/30/2018 |

FIGURE NO:

**3-6**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-6_Pre-CharacterizationSamplingLocations.mxd




Source:
1) Approximate Parcel Boundary and Mean High Water datalayers developed from plans or electronic files provided by"Feldman Land Surveyors" entitled " Existing Conditions" Dated 02-20-2015, Original scale 1"=20', Drawing NO. 14517, CAD file, "14517-EXDRAFT-03-20-15.DWG

amec foster wheeler

**Legend**

- Disposal Site Boundary in Sediment
- Approximate Parcel Boundary
- Salt Marsh
- Cap Limits
- Cap Cells
- Mean High Water (+4.35 feet NAVD88)
- Pre-Construction Mean Low Water (-5.21 feet NAVD88)

N

0 120 240 Feet

**Sediment Capping Cell Layout**

**Former Everett Staging Yard, One Broadway, Everett, MA**
**RTN 3-13341**

| | |
|---|---|
| Drawn By: E. Gardiner | Checked By: J. Rice |
| Project Number: 3651160042.003 | Date: 9/4/2018 |

FIGURE NO:

**3-7**

Document Path: P:\BOS\Wynn Design & Development\3651160042 - Wynn Everett Sediments\7.0 Drawings\7.3 GIS\Fig3-7_SedimentCappingCellLayout.mxd

# APPENDIX A

Selected Photographs

**PHOTO 1:**

Installation of absorbent boom behind turbidity curtain.

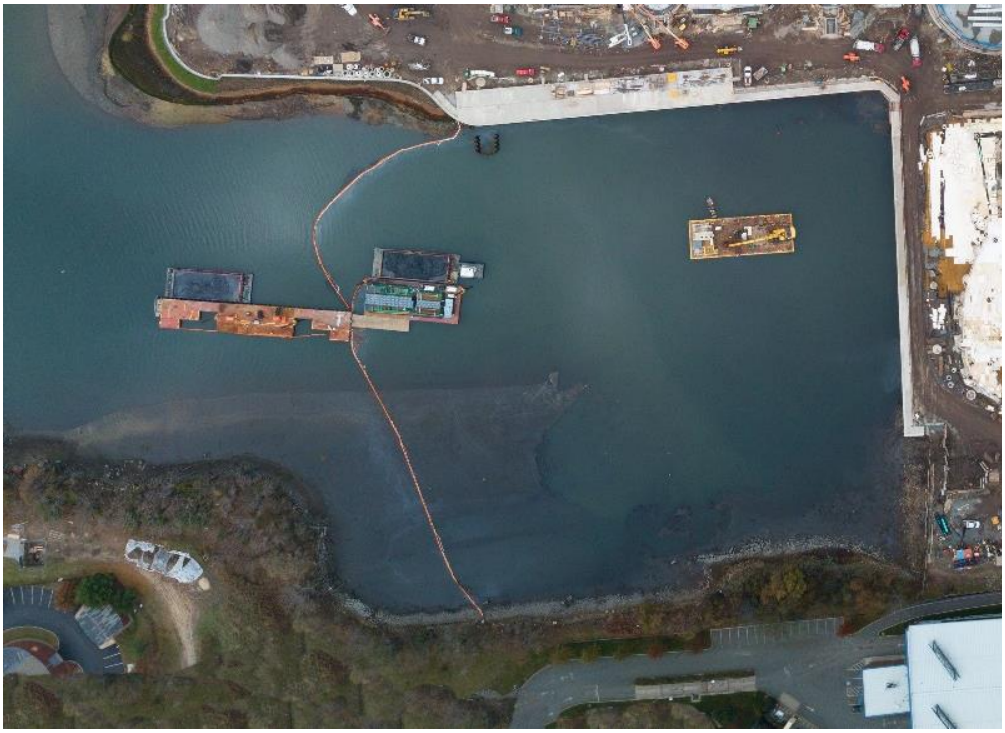


**PHOTO 2:**

Aerial view showing layout of turbidity curtain from November 15, 2017.

**PHOTO 3:**

View from shore looking east at Barges 4, 3, 1 (partially submerged), and 2 (with structures).

**PHOTO 4:**

Demo of Barge #4 by land-based equipment.

**PHOTO 5:**

Demo of Barge #3 by land-based equipment.

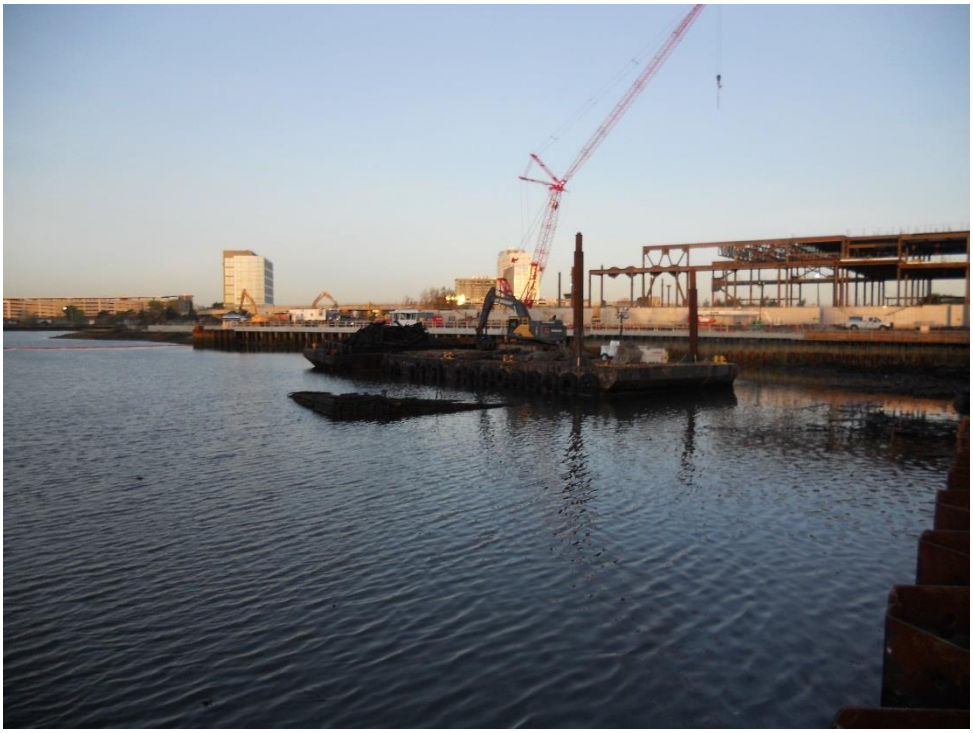


**PHOTO 6:**

Demo of Barge #1 (submerged) by water-based equipment.

**PHOTO 7:**

Barge with water treatment system being relocated by tug boat.

**PHOTO 8:**

Water treatment system barge.

**PHOTO 9:**

Dredging near bulkhead.

**PHOTO 10:**

Dredging in tidal flats at high tide.

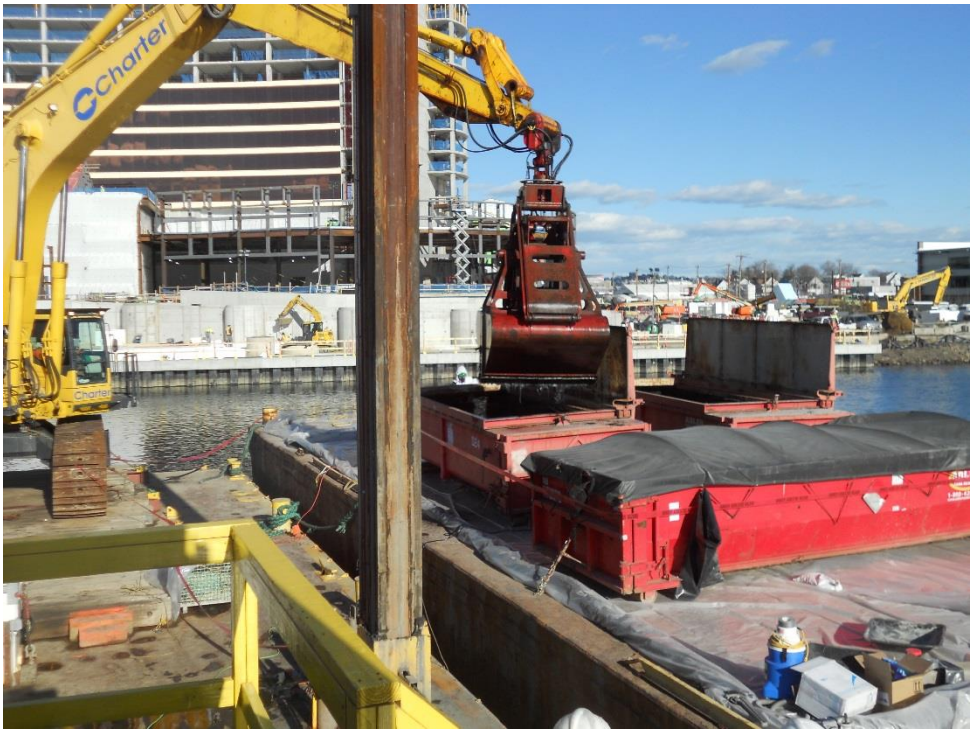



**PHOTO 11:**

Placing asbestos-impacted sediments into lined dewatering boxes.

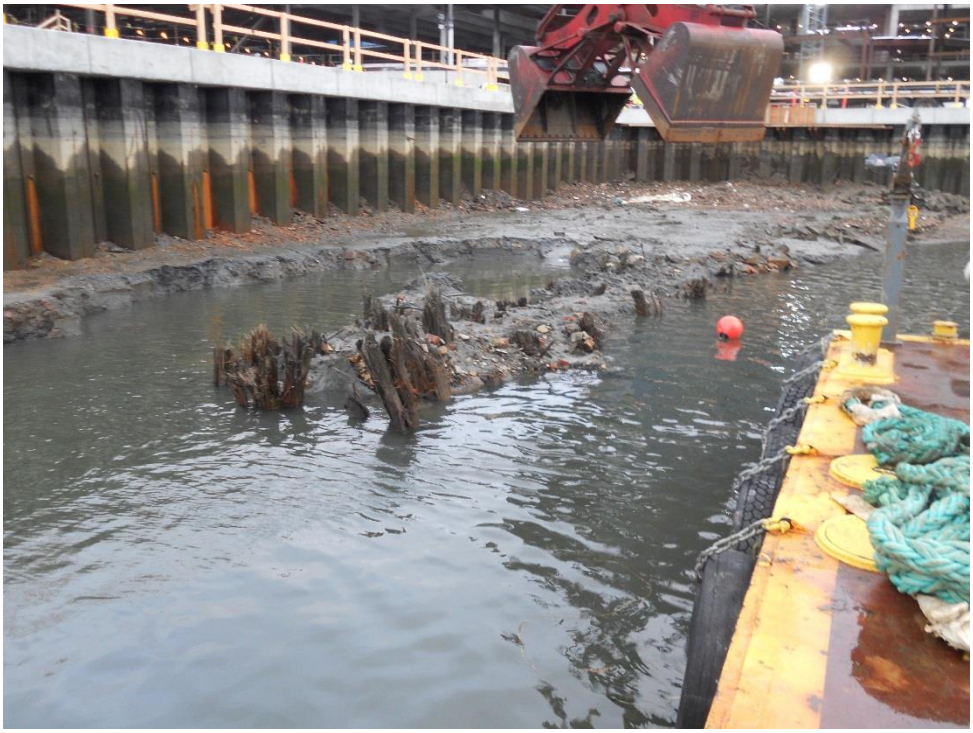


**PHOTO 12:**

Area with >100 wooden piles in northeast corner of dredge area.

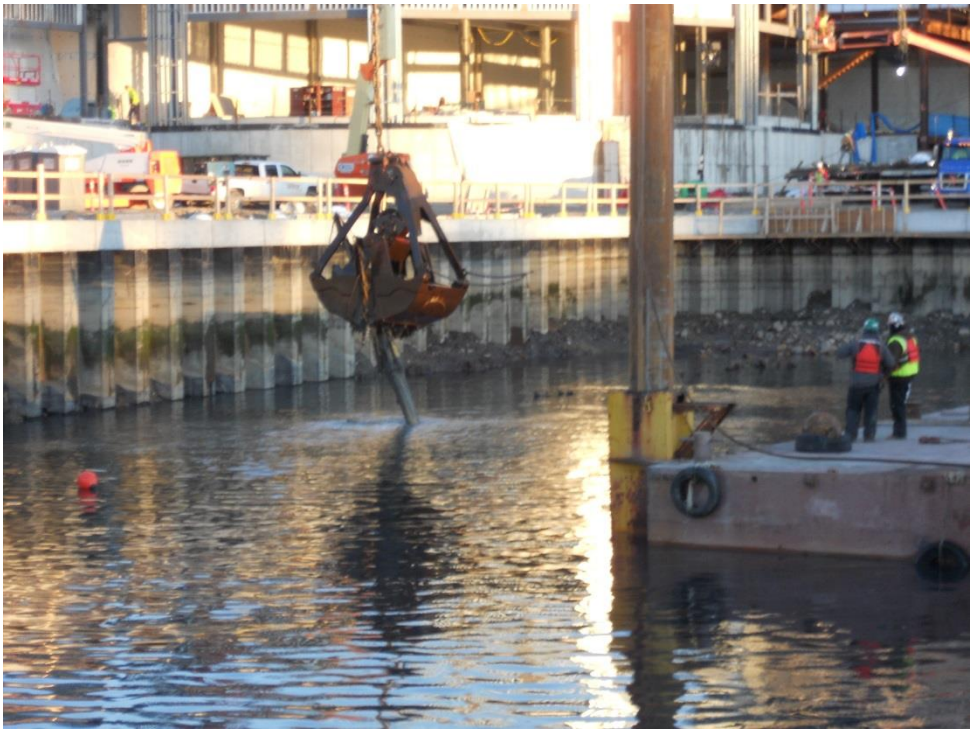


**PHOTO 13:**

Wooden pile being removed by crane.

**PHOTO 14:**

Wooden pile being removed by crane.

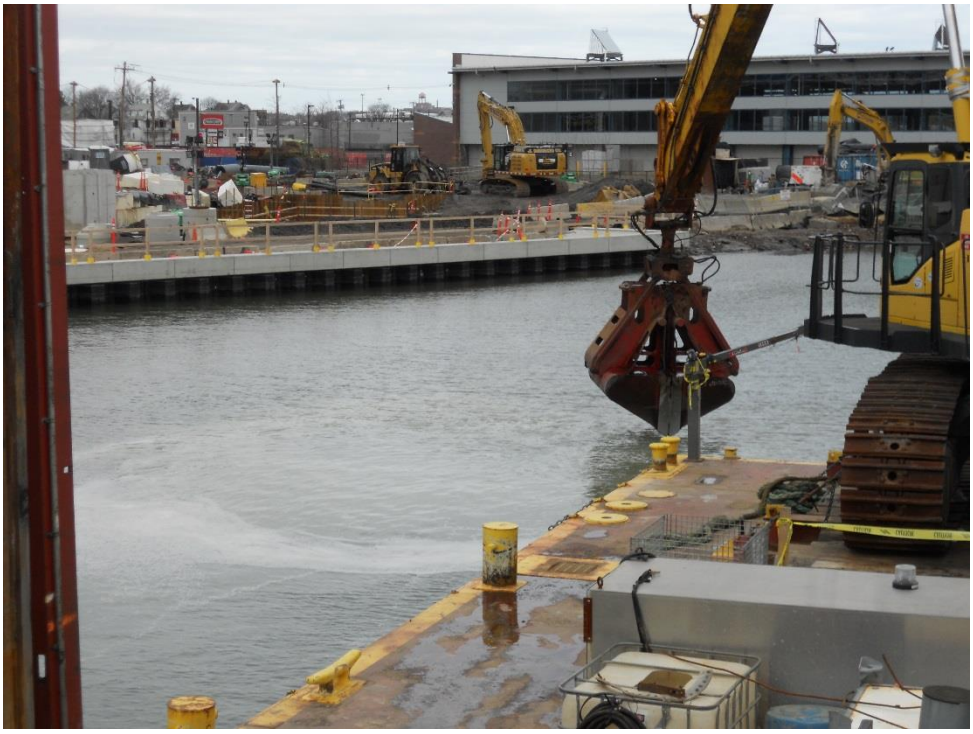


**PHOTO 15:**

Placement of cap material in turning basin.

**PHOTO 16:**

Erosion of cap material south of the wharf (capping cell C13).

**PHOTO 17:**

Continued erosion of cap material south of the wharf (capping cell C13).

**PHOTO 18:**

Grade stake layout for cap material in cell C13

**PHOTO 19:**

Placement of rounded ¾-inch stone base layer south of wharf (capping cell C13).

**PHOTO 20:**

Fabric installation at base of channel in cell C13

**PHOTO 21:**

Coarse channel fill capping in cell C13

**PHOTO 22:**

Final cap surface in area south of wharf (capping cell C13).

**PHOTO 23:**

Initial layout of outlet protection (armor stone) at BWSC outfall.

**PHOTO 24:**

View of sediment offload area from Island End River.

**PHOTO 25:**

View of sediment offload area from dock showing spill plate leading to sediment barge.

**PHOTO 26:**

Excavator on access road between sediment bins in processing area.

# APPENDIX B

Barge Demolition Asbestos Documentation

amec foster wheeler

271 Mill Road, Chelmsford, MA
01824
Tel. (978) 692-9090

# DAILY FIELD REPORT (DFR)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **DFR No.** | | |
| | | | | | Page No | 1 of 2 | |
| Time On Site | **08:30** | Time Off Site | **10:15** | Total Hours On Site | **1.45 hrs** | Date | **09/18/17** |
| Travel Time | | Reason for Travel | **To Inspect for and Collect Suspect ACM (Asbestos Containing Material) on Abandoned Barge** | | | Weather | **Mostly cloudy, temps in 70's** |
| Project Name | **Wynn Construction Oversight** | | | | Project No. | **3651170065** | |
| AMEC Foster Wheeler On-Site | **Mark Maggiore (08:30-10:15)** | | | | Permit No. | | |
| Other Personal On-Site: | SPS New England, Inc and Vinagro | | | | Location | **Everett, MA** | |

Personnel On Site
Greg Bashaw (SPS New England- Boat Operator )
Joe Pasquerella and 2 others (Vinagro)

Equipment
Moterized Skiff for transport

Work Performed
A tailgate safety meeting was conducted prior to the start of work. Group traveled to the abandoned barge via motorized skiff.

The barge was fitted with a large steel space and a smaller wooden structure with a concrete slab on the deck of the barge. Both structures were in poor condition and open to the elements with piles of debris inside and outside of the structures. Both structures and the debris piles were inspected within safety limits. Certain areas inside the structures and portions of the debris piles were not accessed due to safety concerns.

Suspect ACM materials were noted inside and outside the structures as noted below:

- Asphalt roofing and felt paper was mixed with wooded debris outside the wooden structure. Three samples were collected: two from a debris pile in between the two structures and one from a debris pile in front of the wooden structure.
- Window glazing was observed on two of the outside windows as well as some broken windows inside the wooden structure. Two samples were collected, one at window 1 (east side) and one on window 2 (behind the wooden structure). Due to safety hazards, no samples of the broken windows inside the wooden structure were collected.
- There were two electrical service panels, one in the wooden structure and one in the metal structure. No possible transite materials were noted inside the panel in the metal structure. Very little insulation was present behind the panel in the wooden structure. A sample was taken from insulation behind the electrical panel inside the wooden structure.
- Insulation along the walls of the metal structure and inside a conduit outside of the metal structure was collected.
- Insulation from inside piping in the debris pile outside the wooden structure was collected.
- Gasket flanges and belts in debris piles inside the metal structure were collected.

| Sample ID # | Description | Location/Area |
|---|---|---|
| Barge 1-A | Black roofing material | Debris pile outside wooden structure |
| Barge 1-B | Black misc roofing material | Debris pile in between the two structures |
| Barge 2 | Black tar/roofing material | Debris pile in between the two structures |
| Barge 3-A | White window glazing | Window 1/Wooden Structure |
| Barge 3-B | White window glazing | Window 2/Wood Structure |
| Barge 4 | Insulation Electrial Panel | Inside Wooden structure |
| Barge 5 | Insulation inside metal structure | Inside Metal structure |
| Barge 6 | Insulation inside conduit | Debris pile between the two structures |

| | | |
|---|---|---|
| Barge 7 | Insulation inside piping | Debris pile outside wooden structure |
| Barge 8 | Flange gasket | Debris pile inside metal structure |
| Barge 9 | Belt | Debris pile inside metal structure |

Potential hazardous materials noted on the barge included flaking paint (potentially lead-based pait), broken light fixtures (PCB ballasts), and numerous small containters including aerosol cans.

Quality Control/Inspections Performed Took photos of work performed. See Photo log.Samples were collected inside 2 mil plastic baggies and placed in a FedEx box along with a signed Chain of Custody form on a 24 turn around time. The samples were shipped to CEI Labs in Cary,NC prioty overnight .

| | | | |
|---|---|---|---|
| AMEC Foster wheeler<br>Onsite:<br>Mark Maggiore<br>Date:09-18-17 | Signature: | Applicable Specifications | Rev. |
| | | N/A | |
| Reviewed By : Matt Grove<br>Date: 09-20-17 | Signature | **Applicable Drawing No.** | Rev. |
| | | N/A | |
| | | | |

September 20, 2017

AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CLIENT PROJECT:** Wynn Construction Oversight; 3651170065.0004.
**CEI LAB CODE:** A17-13298

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 19, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP® TESTING
NVLAP LAB CODE 101768-0

# ASBESTOS ANALYTICAL REPORT
# By: Polarized Light Microscopy

**Prepared for**

## AMEC Foster Wheeler

CLIENT PROJECT: Wynn Construction Oversight; 3651170065.0004.

CEI LAB CODE: A17-13298

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 09/20/17

TOTAL SAMPLES ANALYZED: 11

# SAMPLES >1% ASBESTOS: 2

**TEL: 866-481-1412**

***www.ceilabs.com***

# Asbestos Report Summary

**By: POLARIZING LIGHT MICROSCOPY**

**PROJECT:** Wynn Construction Oversight; 3651170065.0004.

**CEI LAB CODE:** A17-13298

**METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|---|---|---|---|---|---|
| Barge 1-A | Layer 1 | A2499450 | Black,Gray | Roofing Material (asphalt) | None Detected |
| | Layer 2 | A2499450 | Black,Brown | Roofing Material (felt) | None Detected |
| Barge 1-B | | A2499451 | Black,Brown | Roofing Material | None Detected |
| Barge 2 | Layer 1 | A2499452 | Black,Gray | Roofing Material (asphalt Type 1) | None Detected |
| | Layer 2 | A2499452 | Black | Roofing Material (tar) | Chrysotile 5% |
| | Layer 3 | A2499452 | Black,Brown | Roofing Material (asphalt Type 2) | None Detected |
| Barge 3-A | | A2499453 | Gray,Off-white | Window Glazing | None Detected |
| Barge 3-B | | A2499454 | Gray,Off-white | Window Glazing | Chrysotile 3% |
| Barge 4 | | A2499455 | Gray | Electrical Panel Insulation | None Detected |
| Barge 5 | | A2499456 | Gray,Off-white | Insulation | None Detected |
| Barge 6 | | A2499457 | Brown,Black | Conduit Insulation | None Detected |
| Barge 7 | | A2499458 | Brown | Pipe Insulation | None Detected |
| Barge 8 | | A2499459 | Black | Flange Gasket | None Detected |
| Barge 9 | | A2499460 | Black,Gray | Belt | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13298
**Date Received:** 09-19-17
**Date Analyzed:** 09-20-17
**Date Reported:** 09-20-17

**Project:** Wynn Construction Oversight; 3651170065.0004.

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **Barge 1-A**<br>Layer 1<br>A2499450 | Roofing Material<br>(asphalt) | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 30%<br><br><br> | Cellulose | 25%<br>40%<br>5%<br> | Tar<br>Gravel<br>Mica<br> | None Detected |
| Layer 2<br>A2499450 | Roofing Material (felt) | Heterogeneous<br>Black,Brown<br>Fibrous<br>Bound | 35%<br><br><br> | Cellulose | 55%<br>10%<br><br> | Tar<br>Binder<br><br> | None Detected |
| **Barge 1-B**<br>A2499451 | Roofing Material | Heterogeneous<br>Black,Brown<br>Fibrous<br>Bound | 55%<br><br><br> | Cellulose | 35%<br>10%<br><br> | Tar<br>Binder<br><br> | None Detected |
| **Barge 2**<br>Layer 1<br>A2499452 | Roofing Material<br>(asphalt Type 1) | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 30%<br><br><br> | Cellulose | 25%<br>40%<br>5%<br> | Tar<br>Gravel<br>Mica<br> | None Detected |
| Layer 2<br>A2499452 | Roofing Material (tar) | Heterogeneous<br>Black<br>Fibrous<br>Bound | 10%<br><br><br> | Cellulose | 75%<br>10%<br><br> | Tar<br>Binder<br><br> | **5% Chrysotile** |
| Layer 3<br>A2499452 | Roofing Material<br>(asphalt Type 2) | Heterogeneous<br>Black,Brown<br>Fibrous<br>Bound | 30%<br><br><br> | Cellulose | 25%<br>40%<br>5%<br> | Tar<br>Gravel<br>Mica<br> | None Detected |
| **Barge 3-A**<br>A2499453 | Window Glazing | Heterogeneous<br>Gray,Off-white<br>Fibrous<br>Bound | <1%<br>5%<br><br> | Cellulose<br>Wollastonite | 80%<br>5%<br>10%<br> | Caulk<br>Binder<br>Paint<br> | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13298
**Date Received:** 09-19-17
**Date Analyzed:** 09-20-17
**Date Reported:** 09-20-17

**Project:** Wynn Construction Oversight; 3651170065.0004.

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **Barge 3-B**<br>A2499454 | Window Glazing | Heterogeneous<br>Gray,Off-white<br>Fibrous<br>Bound | <1%<br>2% | Cellulose<br>Talc | 80%<br>5%<br>10% | Caulk<br>Binder<br>Paint | **3% Chrysotile** |
| **Barge 4**<br>A2499455 | Electrical Panel Insulation | Heterogeneous<br>Gray<br>Fibrous<br>Loosely Bound | 85% | Fiberglass | 15% | Binder | None Detected |
| **Barge 5**<br>A2499456 | Insulation | Heterogeneous<br>Gray,Off-white<br>Fibrous<br>Bound | 35% | Fiberglass | 55%<br>10% | Vinyl<br>Binder | None Detected |
| **Barge 6**<br>A2499457 | Conduit Insulation | Heterogeneous<br>Brown,Black<br>Fibrous<br>Bound | 60% | Fiberglass | 30%<br>10% | Tar<br>Binder | None Detected |
| **Barge 7**<br>A2499458 | Pipe Insulation | Heterogeneous<br>Brown<br>Fibrous<br>Loosely Bound | 75% | Cellulose | 25% | Binder | None Detected |
| **Barge 8**<br>A2499459 | Flange Gasket | Heterogeneous<br>Black<br>Non-fibrous<br>Tightly Bound | | | 90%<br>10% | Rubber<br>Binder | None Detected |
| **Barge 9**<br>A2499460 | Belt | Heterogeneous<br>Black,Gray<br>Fibrous<br>Tightly Bound | 30% | Synthetic Fiber | 60%<br>10% | Rubber<br>Binder | None Detected |

| | | |
|---|---|---|
| **LEGEND:** | Non-Anth | = Non-Asbestiform Anthophyllite |
| | Non-Trem | = Non-Asbestiform Tremolite |
| | Calc Carb | = Calcium Carbonate |

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

**REPORTING LIMIT:** <1% by visual estimation

**REPORTING LIMIT FOR POINT COUNTS:** 0.25% by 400 Points or 0.1% by 1,000 Points

**REGULATORY LIMIT:** >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

**ANALYST:** Scott Minyard

**APPROVED BY:** Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

# ASBESTOS CHAIN OF CUSTODY

(11) A7-13.298
A2499450
A2499460

CEI LABS
730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

| LAB USE ONLY: |
|---|
| CEI Lab Code: |
| CEI Lab I.D. Range: |

| COMPANY INFORMATION | PROJECT INFORMATION |
|---|---|
| CEI CLIENT #: | Job Contact: Matt Grove |
| Company: Amec Foster Wheeler | Email / Tel: 978-392-5398 |
| Address: 271 Mill Rd. | Project Name: Wynn Construction Oversight |
| Chelmsford, MA 01824 | Project ID#: 3651170065.0004.xxxx |
| Email: matt.grove@amecfw.com | PO #: Use Project ID # |
| Tel: 978-392-5398 Fax: | STATE SAMPLES COLLECTED IN: MA |

*IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.*

| ASBESTOS | METHOD | TURN AROUND TIME | | | | | |
|---|---|---|---|---|---|---|---|
| | | 4 HR | 8 HR | 24 HR | 2 DAY | 3 DAY | 5 DAY |
| PLM BULK | EPA 600 | ☐ | ☐ | ☒ | ☐ | ☐ | ☐ |
| PLM POINT COUNT (400) | EPA 600 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM POINT COUNT (1000) | EPA 600 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM GRAV w POINT COUNT | EPA 600 | | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM BULK | CARB 435 | | ☐ | ☐ | ☐ | ☐ | ☐ |
| PCM AIR | NIOSH 7400 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | EPA AHERA | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | NIOSH 7402 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | ISO 10312 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | ASTM 6281-09 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM BULK | CHATFIELD | | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM DUST WIPE | ASTM D6480-05 (2010) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM DUST MICROVAC | ASTM D5755-09 (2014) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM SOIL | ASTM D7521-13 | | | ☐ | ☐ | ☐ | ☐ |
| TEM VERMICULITE | CINCINNATI METHOD | | | ☐ | ☐ | ☐ | ☐ |
| OTHER: | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

REMARKS / SPECIAL INSTRUCTIONS:
Sampler: Mark Maggione

☒ Accept Samples
☐ Reject Samples

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| [signature] | 9/18/17 13:30 | [signature] | 9/19/17 9:20 |
| | | | |

*Samples will be disposed of 30 days after analysis*

AM-1J. 298

# ASBESTOS SAMPLING FORM

CEI LABS

| COMPANY CONTACT INFORMATION | |
|---|---|
| Company: Amec Foster Wheeler | Job Contact: Matt Grove |
| Project Name: Wynn Construction Oversight | |
| Project ID #: 36511700 65.004.xxxx | Tel: 978-392-5398 |

| SAMPLE ID# | DESCRIPTION / LOCATION | VOLUME/ AREA | TEST | |
|---|---|---|---|---|
| Barge 1-A | Black Roofing material / on barge outside structures | Debris pile | PLM [X] | TEM [ ] |
| Barge 1-B | Black Misc Roofing material / Inbetween structures | Debris pile | PLM [X] | TEM [ ] |
| Barge 2 | Black Tar/Roofing material / Inbetween structures | Debris pile | PLM [X] | TEM [ ] |
| Barge 3-A | white window glasing / window 1 | wooden structure | PLM [X] | TEM [ ] |
| Barge 3-B | white window glasing / window 2 | wooden structure | PLM [X] | TEM [ ] |
| Barge 4 | Insulation Electrical Panel / Inside wooden structure | wooden structure | PLM [X] | TEM [ ] |
| Barge 5 | Insulation inside metal structure | metal structure | PLM [X] | TEM [ ] |
| Barge 6 | Insulation inside conduit / Between structures | Debris pile | PLM [X] | TEM [ ] |
| Barge 7 | Insulation inside piping | Debris pile | PLM [X] | TEM [ ] |
| Barge 8 | Flange gasket inside metal structure | Debris pile | PLM [X] | TEM [ ] |
| Barge 9 | Belt inside metal structure | Debris pile | PLM [X] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |
| | | | PLM [ ] | TEM [ ] |

Massachusetts Department of Environmental Protection

# BWP AQ 04 (ANF-001) PreForm

Asbestos Notification Form

---

☑ This is a revision to an existing form.
Project ID for existing form to be revised: 100273218

☐ This job is being conducted under a Blanket Permit.
MassDEP assigned Blanket Authorization ID: _____

☐ This job is being conducted under a Non Traditional Abatement Work Practice Permit.
MassDEP assigned Non Traditional Work Practice Authorization ID: _____

☐ This job does not require the use of an asbestos contractor licensed by the MA Department of Labor Standards because (please check one box below):

- ☐ This job involves breaking, shearing or slicing of non-friable asbestos-containing material only (e.g. cement shingles/panels, cement pipe, asphalt roofing or siding, vinyl floor tiles, etc.) in a manner that does not generate asbestos dust or render the material friable, as allowed by the Department of Labor Standards (DLS) at 453 CMR 6.13(2)(a)5. All work must be done in compliance with the applicable regulations at 310 CMR 7.15; or

- ☐ This job involves work on asbestos containing material that is classified by the Department of Labor Standards (DLS) as a 'Small-Scale Asbestos Project,' an 'Asbestos-Associated Project', or an 'Asbestos Response Action' by qualified 'in-house' personnel as allowed by the Department of Labor Standards (DLS) at 453 CMR 6.00, and will be performed in accordance with all the requirements of 453 CMR 6.13 (1)(a), 453 CMR 6.13 (2)(a)1. and 3., and 453 CMR 6.14 (1)(a), as applicable. All work must be done in compliance with the applicable regulations at 310 CMR 7.15.

☐ None of the above conditions apply, generate a new form.

Massachusetts Department of Environmental Protection

# BWP AQ 04 (ANF-001)

Project Revision Notification

100273218R1

**Asbestos Project #**

☑ Project Revision

☐ Project Cancellation

## A. Asbestos Abatement Description

**Instructions** 1. All sections of this form must be completed in order to comply with MassDEP notification requirements of 310 CMR 7.15 and Department of Labor Standards (DLS) notification requirements of 453 CMR 6.12

1. Facility Location:

| | |
|---|---|
| WYNN BOSTON HARBOR | BOSTON HARBOR |
| a. Name of Facility | b. Street Address |
| EVERETT / MA | 02149 / 8577707854 |
| c. City/Town / d. State | e. Zip Code / f. Telephone |
| HELMUT ERNST | PROJECT MANAGE |
| g. Facility Contact Person Name | h. Facility Contact Person Title |

Worksite Location: BARGE

i. Building Name, Wing, Floor, Room, etc.

2. Blanket Permit Project Approval, if applicable:

Approval ID #

3. Non-Traditional Asbestos Abatement Work Practice Approval, if applicable:

Approval ID #

MassDEP Use Only

Date Received

| | |
|---|---|
| 9/28/2017 | 10/5/2017 |
| a. Project Start Date (MM/DD/YYYY) | b. End Date (MM/DD/YYYY) |
| 7AM-3:30PM | N/A |
| c. Work Hours - Monday Through Friday | d. Work Hours - Saturday & Sunday |

2. Submit Original Form To:
**Commonwealth of Massachusetts**
**P.O. Box 4062**
**Boston, MA 02211**

## B. Other Project Revisions:

A.8.A LBT SOLUTIONS, LLC
A.8.B. AM900522
A.12 OTHER: REGULATE AREA
A.13 OUTDOORS
A.15 TWO STAGE DECON

**Note:** Temporary storage of Asbestos containing waste material is only allowed at the place of business of a DLS licensed Asbestos contractor or a transfer station that is permitted by MassDEP and operated in compliance with Solid Waste Regulations 310 CMR 19.000

Massachusetts Department of Environmental Protection

# BWP AQ 04 (ANF-001)

Project Revision Notification

100273218R1

**Asbestos Project #**

☑ Project Revision

☐ Project Cancellation

## C. Certification

**Note:** Contractor must sign this form for DLS notification purposes

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment. The undersigned hereby states that I have read the Commonwealth of Massachusetts regulations governing asbestos abatement (453 CMR 6.00 promulgated by the Department of Labor Standards and 310 CMR 7.15 promulgated by the Department of Environmental Protection), and that I am aware that this permit application or notification shall not be deemed valid unless payment of the applicable fee is made."

| | |
|---|---|
| VANESSA DEL VALLE | VANESSA DEL VALLE |
| 1. Name | 2. Authorized Signature |
| PROJECT COORDINATOR | 9/28/2017 |
| 3. Position/Title | 4. Date (MM/DD/YYYY) |
| 4019437100 | J.R. VINAGRO CORPORATION |
| 5. Telephone | 6. Representing |
| 2208 PLAINFIELD PIKE | JOHNSTON |
| 7. Address | 8. City/Town |
| RI | 02919 |
| 9. State | 10. Zip Code |

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS



# DAILY SITE LOG

| | |
|---|---|
| Date: 9/28/17 | Project #: J170204 |
| Client: Amec Foster Wheeler | Site Location: 1 Horizon Way, Everett, MA |
| Work Area(s): Barge - Wooden Structure | Shift Times: 0700 - 1530 |
| Project Monitor: Mark Jacobs (MJ) | Certification #: AM900522 |
| Contractor: J.R Vinagro Corp. (JVC) | Supervisor: Julio Pantaleon (JP) |

| TIME | SITE NOTES / COMMENTS |
|---|---|
| 0630 | MJ arrives onsite and JVC is already onsite. |
| 0636 | MJ speaks with Greg Bashaw (GB) of SPS about loading equipment onto the boat and the times the boat will be picking up us off the barge later in the day. JVC and MJ are loading equipment on the boats and recieving life jackets that must be wore all day. |
| 0658 | SPS informs everyone the boats are ready to leave for the barge. |
| 0713 | We arrive at barge and unload equipment. MJ and JP walk the work area and discuss the work plan. MJ tells Dennis Quereux (DQ) the project manager for JVR that they need to change the notification and amend it to say "regulated area" instead of "Full containment" and that LBP is the project monitoring company onsite. Also change "3 stage decon" to "2 stage decon". |
| 0726 | JVC begins to set up regulated area around the wooden structure and small debris field around structure. |

*MJ Checks all of the JVC workers paperwork and it is all up to date and they have a hard Copy of the notification onsite.

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacobs

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| 0742 | MJ calibrates 2 HV pumps at 5.42 LPM. |
| 0750 | JVC has completed setting up the regulated area and |
| | put on the Proper PPE to begin the clean up of the small |
| | debris field that has ACM roofing material throughout, they are |
| | utilizing hand tools and shovels to put debris into 2 6mil |
| | asbestos waste bags. They have adequate water is use |
| | from sub pump placed off the side of the bags in the water |
| | to reduce visible emmisons during the abatement activities. |
| 0904 | JVC continuing to bag up debris within the regulated area |
| | around the wooden structure. All workers are wearing Proper |
| | PPE and adequate amount of water during removal. |
| 0911 | DQ informs MJ the corrections have been made to the |
| | notification and it has been emailed to MJ. MJ forwards |
| | the amended notification to Matt Grove (MG) of Amec Foster |
| | Wheeler (AFW). |
| 1045 | JVC has finished cleaning up the debris field around |
| | the wooden structure and has started cleaning up the debris |
| | inside the wooden structure. 2 workers have got on ladders to |
| | start removing the roofing material that is ACM in whole Component |
| | utilizing hand tools. |
| 1130 | JVC takes a break for lunch. |
| 1147 | MJ post-calibrates 2 HV pumps at 5.42 LPM. MJ calibrates |
| | 2 HV pumps at 5.42 LPM. |
| 1150 | JVC is back from lunch. The crew is continuing to remove the |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacob

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| | debris from the inside of the wooden structure and 2 workers |
| | are removing roof material off of ladders in whole Componet |
| | while wearing fall protection and all workers are wearing the |
| | Proper PPE and continuing to use Water. |
| 1231 | JVC has finished cleaning the debris within the Wooden |
| | Structure. 2 workers still removing the roofing material and |
| | the rest of the crew is removing the windows with the |
| | Asbestos containing window glazing and placing them into 2 |
| | 6mil asbestos waste bags (Removed in whole Component). |
| 1305 | The crew fininshed removing the windows and they have started |
| | to loadout the ACWM in the asbestos waste bags out of |
| | the regulated area to the poly'd area in the Metal structure |
| | on the barge. |
| 1328 | MJ speaks with DQ and JP about the asbestos survey |
| | and MJ tells them that he found a fire door that was never |
| | tested for asbestos that is a Suspect ACM. Instead of |
| | taking the time sample and have the door tested DQ, JP and |
| | MJ all agree that JVC will remove it as PACM. |
| 1346 | JVC has finished removing the roofing material from the |
| | roof in whole componet and are final cleaning the regulated |
| | area and continuing to loadout the asbestos waste bags. |
| 1415 | JP informs MJ that the regulated area is ready for |
| | the Final Visual Clearance. MJ passes the regulated area |
| | with no visible debris. |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

**Signature:** Mark Jack

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| 1421 | JVC crew wraps the fire door into a sealed bundle with |
| | 2 layers of 6mil poly and have finished all of the |
| | load out of ACWM to the metal structure. SPS has |
| | been called to pick up us from the barge. |
| 1423 | MJ post-calibrates 2 HV pumps at 5.42 LPM. |
| 1502 | SPS arrives to pick up us from barge. MJ speaks with |
| | DQ and JP, the ACWM will be picked up tomorrow 9/29 in |
| | the morning. |
| 1530 | MJ leaves worksite and reads PCM Samples at LBP office. |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

**Signature:** Mark Jan

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS

**Date:** 9/28/17

**Project:** Wynn Casino - J170204 **Contractor:** J.R. Vinagro Corp.

**Site Address:** 1 Horizon Way, Everett, MA

**Work Area:** Barge - Wooden Structure

**Asbestos Abatement Activities:**
Crew utilized hand tools to remove roofing material and window glazing in whole component

**Visual Inspection Checklist:**

- ☒ All non-essential equipment removed from the work area.
- ☒ All asbestos containing waste material removed from the work area
- ☒ Asbestos waste containers/bags properly sealed and labeled
- ☐ Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- ☒ Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris
- ☒ Decontamination unit thoroughly cleaned and free and clear of all visible debris
- ☒ Interior polyethylene walls free and clear of all visible debris N/A
- ☒ Interior polyethylene floors free and clear of all visible debris

**Abated surfaces:** (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other windows

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Julio Pantaleon

**Disclaimer:** The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS

# Asbestos Air Sampling
## Chain of Custody

PCM NIOSH 7400 Method (Issue 2: Dated 8/15/1994)

MA - AA000238 RI - AAL130

LBP Solutions, LLC
13 Bird St, Suite 6
Foxboro, MA 02035
844-527-5323

| | | |
|---|---|---|
| Client Name: Amec Foster Wheeler | Project #: J170204 | Pass HSE Test Slide: yes |
| Project Location: 1 Horizon Way, Everett, MA | Microscope #: Nikon Alphaphot - YS2 | Graticule Field Area: .00785 |
| Collection Date: 9/28/17 | Rotometer #: HF-03 Date Calibrated: 9/27/17 | Phase Rings Aligned: yes |

| Sample ID# | Location / Worker / Task | Sample Type | Flow Rate Start | Flow Rate End | Flow Rate Ave | Time (24 hour) On | Time (24 hour) Off | Total Time | Total Volume | Fibers/ Fields | Fibers/ mm² | Fibers/ CC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | Blank | 10 | | | | | | | | Ø/100 | Ø | Ø |
| 02 | Blank | 10 | | | | | | | | Ø/100 | Ø | Ø |
| 03 | Outside Decon, West of Regulated Area | 1 | 5.42 | 5.42 | 5.42 | 0742 | 1147 | 245 | 1,327 | 12/100 | 15.2866 | .0044 |
| 04 | South of Regulated Area | 1 | 5.42 | 5.42 | 5.42 | 0743 | 1148 | 245 | 1,327 | 4.5/100 | 5.732 | .0016 |
| 05 | Outside Decon, West of Regulated Area | 1 | 5.42 | 5.42 | 5.42 | 1147 | 1423 | 156 | 845 | 5/100 | 6.3694 | .0029 |
| 06 | South of Regulated Area | 1 | 5.42 | 5.42 | 5.42 | 1148 | 1424 | 156 | 845 | 1/100 | 1.2738 | .0005 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| Sampled By: | Transported By: | Received By: | Prepared By: | Analyzed By: |
|---|---|---|---|---|
| Name: Mark Jacobs | Name: | Name: | Name: | Name: |
| Signature: Mark Jacobs | Signature: | Signature: | Signature: | Signature: |
| Date: 9/28/17 | Date: | Date: | Date: | Date: |

**Sample Type:** 1.) Background 2.) Pre-Abatement 3.) Asbestos Abatement 4.) Final Cleaning 5.) Glove Bags 6.) Personals 7.) Final Air Clearance 8.) Waste Load Out 9.) Other Work 10.) Blank

**Comments:**

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS



# DAILY SITE LOG

| | |
|---|---|
| Date: 9/29/17 | Project #: J170204 |
| Client: Amec Foster Wheeler | Site Location: 1 Horizon Way, Everett, MA |
| Work Area(s): Barge | Shift Times: 0700 – 1500 |
| Project Monitor: Mark Jacobs (MJ) | Certification #: AM900522 |
| Contractor: J.R. Vinagro Corp. (JVC) | Supervisor: Julio Pantaleon (JP) |

| TIME | SITE NOTES / COMMENTS |
|---|---|
| 0645 | MJ arrives onsite. JVC is already onsite and are ready to go to the barge to pick up the equipment and load the ACWM bags onto SPS's boat to bring back to the dock. JVC will put down poly in boat to transport ACWM bag. |
| 0651 | SPS and JVC leave dock for the barge. |
| 0702 | MJ speaks with Dennis Quereux (DQ) and Frank Riccio (FR) of JVC, both are Project Managers, they inform MJ that the asbestos waste dumpster should be arriving approximately around 0700. |
| 0756 | SPS and JVC arrive back at the dock. JVC starts to unload all of their equipment from the boat into the work truck. |
| 0805 | JP lays out 2 layers 6mil poly on the ground and the JVC crew starts to unload the ACWM bags off of the boat onto the poly. |
| 0832 | MJ speaks with JP and there is only one more boat load of ACWM bag remaining on the barge. SPS takes JVC |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacobs

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| | out to the barge for the final trip. |
| 0900 | SPS and JVC arrive back at the dock from the barge and begin unloading the ACWM bag onto the poly. |
| 0906 | MJ speaks with FR to find out when the dumpster will be arriving onsite and he is unsure because the truck is running late. |
| 0933 | The truck arrives onsite from Red Tech and drops the dumpster on the water side of the SPS trailer. MJ speaks with FR about the waste manifest and he tells MJ it will be left with SPS for a Wynn Rep to sign. |
| 0938 | JVC begins to line the dumpster with 2 layers of 6mil poly on the walls and floor. MJ speaks with FR and JP to make sure we all count the number of bags for an accurate count. |
| 0945 | JVC starts loading dumpster with ACWM bags and JP, MJ and FR are keeping count. |
| 1001 | JP puts asbestos signs and the proper transportation placards on the dumpster. |
| 1025 | JVC finishes loading dumpster and seals it. The total count was 125 bag and 1 Bundle. |
| 1029 | MJ and FR take waste manifest to SPS trailer and speak with Devon Wilton of SPS, who will be holding |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

**Signature:** [signature]

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| | on to the waste manifest to be signed by Wynn Rep. |
| | Devon Wilton said he would inform MJ and FR when |
| | the waste manifest is signed. |
| 1115 | MJ leaves worksite to LBP office to compile paperwork |
| | and write clearance letter. |
| 1511 | Devon Wilton tells MJ that the waste manifest |
| | has been signed and that the asbestos waste |
| | dumpster will be picked up on Tuesday 10/3. |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: [signature]

September 29, 2017

Mr. Matt Grove
Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824

Final Visual Inspection

Barge - Roofing Material and Window Glazing
1 Horizon Way
Everett, MA 02149

Dear Mr. Matt Grove,

On September 28 and 29, 2017, LBP Solutions, LLC (LBP) performed a visual inspection to determine the completion of asbestos removal activities. Removal activities involved the removal of asbestos containing roofing material and window glazing from the wooden structure on the barge. J. R. Vinagro Corporation Massachusetts Department of Labor Standards License # AC000837 conducted the abatement utilizing hand tools to remove the roofing material and the window glazing by whole component. Upon visual inspection of the work area, no evidence of visible debris was observed. Mr. Mark Jacobs of LBP, Massachusetts Department of Labor Standards License # AM900522, performed the visual inspection.

A copy of the visual inspection log is also attached.

LBP would like to thank you for the opportunity to have serviced Mr. Matt Grove's environmental testing needs. If you have any questions regarding the completed testing, please don't hesitate to call.

Sincerely,

Mark Jacobs

Mark Jacobs
Project Manager

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

**Date:** 9/28/17

**Project:** Wynn Casino - J170204 **Contractor:** J.R. Vinagro Corp.

**Site Address:** 1 Horizon Way, Everett, MA

**Work Area:** Barge - Wooden Structure

**Asbestos Abatement Activities:** Crew utilized hand tools to remove roofing material and window glazing in whole compound

**Visual Inspection Checklist:**

- [x] All non-essential equipment removed from the work area. _____
- [x] All asbestos containing waste material removed from the work area _____
- [x] Asbestos waste containers/bags properly sealed and labeled _____
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [x] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris _____
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris _____
- [x] Interior polyethylene walls free and clear of all visible debris N/A
- [x] Interior polyethylene floors free and clear of all visible debris _____

**Abated surfaces:** (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors (Roof) Siding Sink (Other) windows

Are the abated surfaces free and clear of all visible debris? Yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Julio Pantaleon

**Disclaimer:** The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

William D. McKinney,
Director

**Asbestos Project Monitor**

**MARK J. JACOBS**

**Eff. Date 11/07/16**
**Exp. Date 11/07/17**
**AM900522**
**Member of C.O.N.E.S.**
**BOSR BOS-RENEW**

**17**

*This is to certify that*

# Mark J. Jacobs

*has completed the requisite training, and has passed an examination for reaccreditation*

## Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

**Course Location**

**LBP Solutions**
**13 Bird Street Suite 6 Foxboro, MA 02035**

**July 3, 2017**
Course Dates

**17-0971-174-261380**
Certificate Number

**July 03, 2017**
Examination Date

**July 03, 2018**
Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887 Telephone 978.658.5272 www.ieetrains.com

**INSTITUTE FOR ENVIRONMENTAL EDUCATION**

Certificate No: **A046634**

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT

**DEPARTMENT OF LABOR STANDARDS**

19 STANIFORD STREET, BOSTON, MASSACHUSETTS 02114

## CERTIFICATION FOR ASBESTOS ANALYTICAL SERVICES

LBP SOLUTIONS, LLC
13 BIRD STREET
SUITE 6
FOXBORO MA 02035

LICENSE: **AA000238** EXPIRES: **Friday, August 24, 2018**

IN ACCORDANCE WITH MGL CH. 149 § 6B AND 453 CMR 6.08 THIS CERTIFICATE IS ISSUED BY THE DEPARTMENT OF LABOR STANDARDS TO THE ABOVE NAMED ENTITIY TO PROVIDE THE ASBESTOS ANALYTICAL SERVICES SPECIFICALLY LISTED BELOW.

CLASS C CERTIFICATE

William D. McKinney

WILLIAM D. MCKINNEY, DIRECTOR

***Mailing Address:***

LBP SOLUTIONS, LLC
13 BIRD STREET
SUITE 6
FOXBORO, MA 02035

# Massachusetts Asbestos Waste Shipment Record

100273218
MassDEP Asbestos Notification Number

№ 1664

**GENERATOR**

**Work Site**
WYNN BOSTON HARBOR EVERETT MA 02149
Name & Address of Facility or Work Site

WYNN Design + Development — 857-770-7854
Owner/Operator (Generator) Name — Telephone Number

**Asbestos Abatement Project**
J.R VIVAGRO CORP 2208 PLAINFIELD PIKE JOHNSTON, RI, 02919
Name & Address of Asbestos Contractor

AC000837 — Frank Riccio — 401-255-7292
Department of Labor Standards (DLS) License Number — Contact Person Name (If Different From Above) — Telephone Number

**Asbestos-Containing Waste Material (ACWM)** - Specify Type & Amount Generated
☐ Friable _____ Quantity in Cubic Meters (Cubic Yards)
☒ Non-Friable 10 yrds Quantity in Cubic Meters (Cubic Yards)

**Containers Used for Shipment of ACWM** - Specify Type & Number Used
☐ Drums/Barrels _____ Number
☒ 6-Mil Plastic Bags/Wrap 125 Number
☒ Other: BAGS / 1 Bundle Specify Number

Work Site Owner/Operator Certification: "I hereby certify that the contents of this shipment are fully and accurately described above and that they have been characterized, packaged, marked and labeled in accordance with 310 CMR 7.15."
9-29-17 Certification Date (MM/DD/YYYY)

Frank Riccio — Signature
Frank Riccio — Print Name
SUPEVISOR — Title
CHRIS GORDON — CHRIS GORDON — PRES, WYNN DEV.

**TRANSPORTER 1**

R.E.D Technologies LLC 10 North Woods Drive Bloomfield CT 06002
Name & Address of Company or Person Transporting ACWM

_____ — 860-218-2428 — _____
Contact Person Name (If Different From Above) — Telephone Number — Date ACWM Was Picked Up (MM/DD/YYYY)

Transporter # 1 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state and local regulations."
_____ Certification Date (MM/DD/YYYY)

_____ Signature — _____ Print Name — _____ Title

**TRANSPORTER 2**

_____
Name & Address of Company or Person Transporting ACWM

_____ — _____ — _____
Contact Person Name (If Different From Above) — Telephone Number — Date ACWM Was Picked Up (MM/DD/YYYY)

Transporter # 1 Certification: "I hereby certify that the contents of this shipment are in all respects in the proper condition for transport according to applicable international, federal, state and local regulations."
_____ Certification Date (MM/DD/YYYY)

_____ Signature — _____ Print Name — _____ Title

**DISPOSAL SITE**

Minerva Enterprises, 8955 Minerva Road SE
Name & Address of Company or Person Operating Disposal Site

Waynesburg — OH — 44688
City/Town — State — ZIP Code

_____ — 330-866-3435 — _____
Contact Person Name (If Different From Above) — Telephone Number — Date Shipment Was Received (MM/DD/YYYY)

Indicate Any Discrepancies

Disposal Facility Certification: "I hereby certify that (1) the quantity of ACWM listed on this asbestos waste shipment record is the same as the quantity accepted for disposal and (2) this facility holds the appropriate permits and/or authorizations to accept for disposal the ACWM described."

_____ Signature — _____ Print Name — _____ Title

**WHITE SIGNATURE PAGE MUST STAY ATTACHED! Until Delivery to Receiving Facility (White, Yellow, Pink, Gold)**
**White** – Generator; **Yellow** – WDS; **Pink** – Transporter; **Gold** – Transporter 2; **Blue** – Contractor; **Green** – Remains at Shipment

271 Mill Road, Chelmsford, MA
01824
Tel. (978) 692-9090

# DAILY FIELD REPORT (DFR)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | **DFR No.** | | |
| | | | | | Page No | 1 of 1 | |
| Time On Site | **08:00** | Time Off Site | **10:00** | Total Hours On Site | **2.0 hrs** | Date | **10/09/2017** |
| Travel Time | **1.5** | Reason for Travel | **To Inspect for and Collect Suspect ACM (Asbestos Containing Material) on Piping and Stockpiled Timber** | | | Weather | **Overcast, ShowersTtemps in 70's** |
| Project Name | **Wynn Construction Oversight** | | | | Project No. | **3651170065** | |
| AMEC Foster Wheeler On-Site | **Mark Maggiore (08:00-10:00)** | | | | Permit No. | | |
| Other Personal On-Site: | Wynn | | | | Location | **Everett, MA** | |

Personnel on Site
Bowen Chen – Wynn

Work Performed
Arrived at 3 Charlton Street, Wynn Main offices, to meet with Bowen Chen (Wynn Rep) to escort me to the poly covered piping that was in question as possible ACM. There were three pieces of piping (covered upon arrival) which were inspected for possible ACM: a long intact pipe, a broken small piece of pipe, and a smaller tubular piece of piping. During inspection of the pipe, I noted a piece of timber that was extruding from the timber stockpile which appeared to have a fibrous coating which could be possible ACM. This prompted me to walk around the perimeter of the timber stockpile to determine if other similar timbers were present. Eighteen samples were collected for possible ACM with three representative samples of each material collected. No samples were taken from the smaller tubular piece of piping or other pieces of piping observed inside of the timber stockpile from the west side of the stockpile.

- Three samples were collected from outer insulation from the long intact pipe. Black insulted, tar material. ID = Black Outer Insulation Pipe- 1A, B, C.
- Three samples were collected inside of the broken small piece of pipe. Black insulted fibrous material. ID = Black Small Inner Pipe – 1A,B,C.
- Three samples were collected from a rubber flange from the broken small piece pipe. Black rubber flange. ID = Black Small Pipe Flange- 1, A, B, C.
- Three samples were collected from the extruding timber from the stockpile. Black insulted fibrous material. ID = Black Insulation Timber- 1A,B,C.
- Three samples were collected from material on the eastern side of the stockpile. Black insulated material. ID =Black Insulation Stockpile -1A, B, C.
- Three samples were collected from material on the northeastern side of the timber stockpile. Black Insulated material. ID = Black Insulation Stockpile- 2A, B, C.

Quality Control/Inspections Performed
Samples were placed in ziplock bags and labeled with date/time, sample ID, and Site location. All samples were placed under a chain of custody and delivered to ProScience Analytical Services in Woburn, MA at 12:37 in the afternoon with a less than 6 hour turnaround time (by 5 pm) with verbal confirmation of results.

| | | | |
|---|---|---|---|
| AMEC Foster wheeler Onsite:<br>Mark Maggiore<br>Date:10-09-17 | Signature: | Applicable Specifications<br>N/A | Rev. |
| Reviewed By : Matt Grove<br>Date: 10-19-17 | Signature | **Applicable Drawing No.**<br>N/A | Rev. |
| | | | |

**PHOTO 1:**
View of a long intact pipe, a small piece of broken pipe, and smaller tubular piece of pipe which were suspected to have asbestos-containing material on them. Stockpile of timbers from barge demo in the background.

Possible ACM observed on adjacent timber (red circle). Sample ID = Black Insulation Timber -1A, B, C

**PHOTO 2:**
View of exposed piping inside stockpile on west side of the stockpile. Photo taken looking northeast.

**PHOTO 3:**
View of timber stockpile looking west.

**PHOTO 4:**
View of possible ACM (circled in red) inside stockpile on eastern side of stockpile. Sample ID = Black Insulation Stockpile - 1A, B, C.
**[Image Wynn Construction_100917 (12). View of Possible ACM collected inside Stockpile on Eastern Side of Stockpile.}**

**PHOTO 5:**
Close up view of material identified as "Black Insulation Stockpile – 1".

**PHOTO 6:**
View of possible ACM (circled in red) observed on the northeast portion of timber stockpile. Sample ID Black Insulation Stockpile-2A, B, C.

**PHOTO 7:**
View of smaller broken pipe looking west**.**

**PHOTO 8:**
View of inner insulation inside smaller broken pipe. Sample ID = Black Small Inner Pipe – 1A,B,C.

**PHOTO 9:**
Close-up view of black insulation inside smaller broken pipe. Sample ID = Black Small Inner Pipe-1A.

**PHOTO 10:**
View of suspect ACM insulation on timber in stockpile adjacent to pipe.

**PHOTO 11:**
Close-up view of suspect ACM insulation. Sample ID =Black Insulation Timber – 1.

**PHOTO 12:**
View of long intact pipe. Possible ACM samples collected from outer insulation. Sample ID = Black Outer Insulation Pipe-1A, B, C.

**PHOTO 13:**
View of rubber flange inside small broken pipe which was suspect ACM. Sample ID = Black Small Pipe Flange- 1, A, B, C.

**PHOTO 14:**
View of smaller tubular pipe. No suspect ACM identified or sampled.

# ProScience Analytical Services, Inc

Matt Grove
AMEC Foster Wheeler Environment &
Infrastructure, Inc.
271 Mill Rd.
Chelmsford, MA 01824

October 09, 2017

Dear Matt Grove,

The enclosed analytical results have been obtained by using EPA 600/R-93/116 or EPA 600/M4-82-020. Calibrated Visual Estimate (CVE) is used by ProScience for the determination of the percentage of asbestos and other components in the sample. Point Counting is recommended when the sample contains less than 10% asbestos by CVE. Friable materials found to be less than 1% by CVE are automatically point counted (400 points) at no additional charge. ProScience recommends further analysis by a gravimetric method for non-friable materials that are less than 1% by CVE.

The Quality Control data related to the samples analyzed is available upon client's written request. ProScience Analytical Services Inc., assumes no responsibility for potential sample contamination that may have occurred during the sample collection process or erroneous data provided by the client.

The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.

All Laboratory records are retained for at least three years unless otherwise directed in writing by the client. The actual samples are retained for a period of two months and written request is necessary in order to be retained for a longer period of time. All analytical results and records are considered strictly confidential and will not be released under any circumstances to anyone except the actual client. The analytical results included in this report apply only to the items tested.

If you have any questions please contact the Laboratory Manager or the Laboratory Director.

Sincerely,

Patricia Weakley

Patricia Weakley, Optical Asbestos Manager

Aimee Cormier, Laboratory Director

Enclosure: Version 2
LAB BATCH ID: B 106854 CLIENT PROJECT ID: 3651170065.004.XXXY
Client Ref: Wynn Construction
CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056; NVLAP Lab Code 200090-0; RI ID # AAL-093; VT ID# AL016876

*22 Cummings Park • Woburn, Massachusetts • 01801 • Phone (781)935-3212 • Fax (781)932-4857*

# ProScience Analytical Services, Inc.

Client Name: AMEC Foster Wheeler Environment & Infrastructure, Inc.
PO #: Bill to PN
Client Project #: 3651170065.004.xxxy
Client Reference: Wynn Construction
Method: EPA/600/R-93/116

**Batch:** **B106854**
Date Sampled: 10/9/2017
Date Received: 10/9/2017
Date Analyzed: 10/9/2017
Date of Report: 10/9/2017

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Small Inner Pipe-1A | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

Description: Small Inner Pipe Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Small Inner Pipe-1B | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

Description: Small Inner Pipe Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Small Inner Pipe-1C | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

Description: Small Inner Pipe Insulation
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Timber-1A | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 60 |

Description: Black Insulation on Timber in Stockpile
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Timber-1B | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 60 |

Description: Black Insulation on Timber in Stockpile
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Timber-1C | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 60 |

Description: Black Insulation on Timber in Stockpile
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

# ProScience Analytical Services, Inc.

Client Name: AMEC Foster Wheeler Environment & Infrastructure, Inc.
PO #: Bill to PN
Client Project #: 3651170065.004.xxxy
Client Reference: Wynn Construction
Method: EPA/600/R-93/116

**Batch:** **B106854**
Date Sampled: 10/9/2017
Date Received: 10/9/2017
Date Analyzed: 10/9/2017
Date of Report: 10/9/2017

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Outer Insulation Pipe-1A | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

Description: Long Pipe, Outer Insulation Black
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Outer Insulation Pipe-1B | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

Description: Long Pipe, Outer Insulation Black
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Outer Insulation Pipe-1C | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |

Description: Long Pipe, Outer Insulation Black
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Small Pipe Flange-1A | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 90 |

Description: Flange, Smaller Pipe
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Small Pipe Flange-1B | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 90 |

Description: Flange, Smaller Pipe
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Small Pipe Flange-1C | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 90 |

Description: Flange, Smaller Pipe
Location: N/A
Comments:
Is asbestos present? No. Analyzed: Yes

# ProScience Analytical Services, Inc.

Client Name: AMEC Foster Wheeler Environment & Infrastructure, Inc.
PO #: Bill to PN
Client Project #: 3651170065.004.xxxy
Client Reference: Wynn Construction
Method: EPA/600/R-93/116

**Batch:** **B106854**
Date Sampled: 10/9/2017
Date Received: 10/9/2017
Date Analyzed: 10/9/2017
Date of Report: 10/9/2017

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Stockpile-1A | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 60 |

Description: East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Stockpile-1B | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 60 |

Description: East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Stockpile-1C | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 60 |

Description: East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Stockpile-2A | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 70 |

Description: North East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Stockpile-2B | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 70 |

Description: North East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

| | | Asbestos % | | | | | | Non-Asbestos % | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample ID | Color | CHR | AMO | CRO | ACT | TRE | ANT | FBG | MNW | CEL | HAR | SYN | OTH | NON |
| Black Insulation Stockpile-2C | Black | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 70 |

Description: North East Portion of Timber Stockpile, Insulation
Location: N/A
Comments: Is asbestos present? No. Analyzed: Yes

Asbestos Codes: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite
Non-Asbestos Codes: FBG = Fiberglass MNW = Mineral Wool CEL = Cellulose HAR = Hair SYN = Synthetic OTH = Other NON = Non-Fibrous Minerals

**Note:** To create a unique lab sample ID, use the Batch #and the Sample ID (example: [Batch #] - [Sample ID]).

* All results are in percentage.

**Analyst:** Sophetra Ken

**ProScience** *Analytical Services, Inc.* www.proscience.net
22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

**TAT** (circle one): 3 Hours / 6 Hours / Same Day / Next Day / 2 Days / 3 Days / 5 Days / Other _____
TAT in bus. days - lab approval required for rush analysis

**PASI Batch #** B106854

**PLM Chain of Custody**

Client: Amec Foster Wheeler
Address: 271 Mill Rd. Chelmsford, MA
Project #: 3651170065.004.xxxy PO: Bill to PN
Project Site: Wynn Construction
Contact: Matt Grove
Tel. / Fax #: 978-392-5398 / 978-265-1458 cell
Email: matt.grove@amecfw.com

Stop on first positive*: Yes / No
*If no selelction is made the lab will analyze all samples
Special Instructions: Call w/verbal
Relinquished By: [signature] Date/Time: 10/9/17 1237
Received By Lab: Margaret Valento Date/Time: 10.9.17 1237
Shaded area for lab use only. Due Date:
# of SamplesReceived: 18 Analyzed:
Results: email fax verbal By: PW H.W. MMV Date: 10/9/17 4:10 pm (428 pm) H.W.
Analyst / Date: [signature] 10/9/17 QC by / Date: [signature] 10/9/17

| Sample ID | Date Sampled | Description / Location | SSAPE | Color | Homogeneity | Texture | Friable | Morphology | Extinction | Sign of Elongation | Birefringence | Pleochroism | RI ∥ | RI ⊥ | Chrysotile | Amosite | Crocidolite | Tremolite | Anthophyllite | Actinolite | Fiberglass | Mineral Wool | Cellulose | Hair | Synthetic | Other | Non Fibrous |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Black small Inner pipe -1A | 10/9/17 900 | Small Inner pipe Insulation | Ø | BK | N | MT | N | | | | | | | | | | | | | | | | | | | | 100 |
| 2 Black small Inner pipe -1B | 10/9/17 902 | Small Inner pipe Insulation | Ø | BK | N | MT | N | | | | | | | | | | | | | | | | | | | | 100 |
| 3 Black small Inner pipe -1C | 10/9/17 904 | Small Inner pipe Insulation | Ø | BK | N | MT | N | | | | | | | | | | | | | | | | | | | | 100 |
| 4 Black Insulation timber -1A | 10/9/17 905 | Black Insulation on timber in stockpile | Ø | BK | Y | MT | N | | | | | | | | | | | | | | | | W 40 | | | | 60 |
| 5 Black Insulation timber -1B | 10/9/17 907 | Black Insulation on timber in stockpile | Ø | BK | Y | MT | N | | | | | | | | | | | | | | | | W 40 | | | | 60 |
| 6 Black Insulation timber -1C | 10/9/17 908 | Black Insulation on timber in stockpile | Ø | BK | Y | MT | N | | | | | | | | | | | | | | | | W 40 | | | | 60 |

**Comments:** Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 201850, 229027, 235000, 231856 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.5 Updated 02/08/17



Each layer of multilayered materials are analyzed and charged individually (per NESHAP/EPA)

# ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

**TAT** (circle one): 3 Hours, 6 Hours, Same Day, Next Day; 2 Days, 3 Days, 5 Days, Other _____

TAT in bus. days - lab approval required for rush analysis

**PASI Batch #** B106854

## PLM Chain of Custody

Client: Amec Foster Wheeler

Address: 271 Mill Rd. Chelmsford, MA 01824

Project #: 36511700065.004.xxxx PO: Bill to project #

Project Site: Wynn Construction

Contact: Matt Grove

Tel. / Fax #: 978-392-5348

Email: matt.grove@amecfw.com

Stop on first positive*: Yes / No *If no selection is made the lab will analyze all samples

Special Instructions:

Relinquished By: [signature] Date/Time: 10/9/17 1231

Received By Lab: Date/Time:

Shaded area for lab use only. Due Date:

# of Samples Received: Analyzed:

Results: email fax verbal By: Date:

Analyst / Date: [signature] 10/9/17 QC by / Date:

| Sample ID | Date Sampled | Description / Location | SSAPE | Color | Homogeneity | Texture | Friable | Morphology | Extinction | Sign of Elongation | Birefringence | Pleochroism | ∥ | ⊥ | Chrysotile | Amosite | Crocidolite | Tremolite | Anthophyllite | Actinolite | Fiberglass | Mineral Wool | Cellulose | Hair | Synthetic | Other | Non Fibrous |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7 Black Outer Insulation pipe-1A | 10/9/17 910 | long pipe, Outer Insulation Black | Ø | BK | Y | M T | N | | | | | | | | | | | | | | | | | | | | 100 |
| 8 Black Outer Insulation pipe-1B | 10/9/17 912 | long pipe, outer Insulation Black | Ø | BK | N | M T | N | | | | | | | | | | | | | | | | | | | | 100 |
| 9 Black Outer Insulation pipe-1C | 10/9/17 914 | long, pipe, outer Insulation Black | Ø | BK | Y | M T | N | | | | | | | | | | | | | | | | | | | | 100 |
| 10 Black Small pipe Flange-1A | 10/9/17 930 | Flange, smaller pipe | Ø | BK | Y | M T | N | | | | | | | | | | | | | | | | W 10 | | | | 90 |
| 11 Black Small pipe Flange-1B | 10/9/17 932 | Flange, smaller pipe | Ø | BK | Y | M T | N | | | | | | | | | | | | | | | | W 10 | | | | 90 |
| 12 Black Small pipe Flange-1C | 10/9/17 934 | Flange, Small pipe | Ø | BK | Y | M T | N | | | | | | | | | | | | | | | | W 10 | | | | 90 |

**Comments:** Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 201850, 229027, 235000, 231856 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.5 Updated 02/08/17

# ProScience *Analytical Services, Inc.* www.proscience.net

22 Cummings Park, Woburn, MA 01801 T: 781-935-3212 F: 781-932-4857 general@proscience.net

**TAT** (circle one): 3 Hours 6 Hours Same Day Next Day; 2 Days 3 Days 5 Days Other _____

TAT in bus. days - lab approval required for rush analysis

**PASI Batch #** B106854

**PLM Chain of Custody**

Client: Amec Foster Wheeler

Address: 271 Mill Rd. Chelmsford, MA 01824

Project #: 36511700G5.004.XXXV PO: Bill to PN

Project Site: Wynn Construction

Contact: Matt Grove

Tel. / Fax #: 978-392-5398

Email: matt.grove@amecfw.com

Stop on first positive*: Yes / No *If no selection is made the lab will analyze all samples

Special Instructions:

Relinquished By: Date/Time: 10/9/17 1237

Received By Lab: Date/Time:

Shaded area for lab use only. Due Date:

# of SamplesReceived: Analyzed:

Results: email fax verbal By: Date:

Analyst / Date: 10/9/17 QC by / Date:

| Def | Sample ID | Date Sampled | Description / Location | SSAPE | Color | Homogeneity | Texture | Friable | Morphology | Extinction | Sign of Elongation | Birefringence | Pleochroism | RI ∥ | RI ⊥ | Chrysotile | Amosite | Crocidolite | Tremolite | Anthophyllite | Actinolite | Fiberglass | Mineral Wool | Cellulose | Hair | Synthetic | Other | Non Fibrous |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Stereo Scope | | | | | Optical Properties | | | | | RI | | Asbestos Percentage (%) | Circle Type | | | | | Non Asbestos Percentage (%) | | | | | | |
| 13 | Black Insulation Stockpile -1A | 10/9/17 935 | ~~Northeast~~ East portion of timber stockpile, Insulation | Ø | BK | Y | M/T | N | | | | | | | | | | | | | | | | W | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 40 | | | | 60 |
| 14 | Black Insulation Stockpile -1B | 10/9/17 937 | ~~Northeast~~ East portion of timber stockpile, Insulation | Ø | BK | Y | M/T | N | | | | | | | | | | | | | | | | W | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 40 | | | | 60 |
| 15 | Black Insulation Stockpile -1C | 10/9/17 939 | East portion of timber stockpile, Insulation | Ø | BK | Y | M/T | N | | | | | | | | | | | | | | | | W | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 40 | | | | 60 |
| 16 | Black Insulation Stockpile -2A | 10/9/17 940 | Northeast portion of timber Stockpile, Insulation | Ø | BK | Y | M/T | N | | | | | | | | | | | | | | | | W | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | | 70 |
| 17 | Black Insulation Stockpile -2B | 10/9/17 942 | Northeast portion of timber Stockpile, Insulation | Ø | BK | Y | M/T | N | | | | | | | | | | | | | | | | W | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 70 | |
| 18 | Black Insulation Stockpile -2C | 10/9/17 945 | Northeast portion of timber Stockpile, Insulation | Ø | BK | Y | M/T | N | | | | | | | | | | | | | | | | W | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | 30 | | | 70 | |

**Comments:** Birefringence L= less than .010, M= .011-.029, H= greater than .03: Microscope Olympus BH-2, Serial # circle 1- 201850, 229027, 235000, 231856 Lab uses the EPA or ELAP point count method as appropriate. SSAPE = Stereo Scope Asb. % Est.

ver 4.5 Updated 02/08/17

# APPENDIX C

Remediation Waste Documentation

# Detail Customer Activity Report

All Ticket Types

October 03, 2017 to October 03, 2017

* - Confirmed Qty Applied to Billing

History and Waiting

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

| Ticket Date | Facility & Ticket Number | Contract | Truck # | Container | Material | Material Rate | Billing Quantity | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/03/2017 | I AR 64974 | Timbers | Other | | Pressure-Treated Wood | F | 28.24 TN | | | |

Tickets 1 Items Reported: 1

Customer Totals:

| Material Summary | Weight Inbound | Weight Outbound | Volume Inbound | Volume Outbound | Count Inbound | Count Outbound | Billing Quantity | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| PT - Pressure-Treated Wood | 28.24 | 0.00 TN | 0.00 | 0.00 YD | 0.00 | 0.00 | 28.24 TN | | | |

# Detail Customer Activity Report

All Ticket Types

October 04, 2017 to October 04, 2017

* - Confirmed Qty Applied to Billing

History and Waiting

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

| Ticket Date | Facility & Ticket Number | Contract | Truck # | Container | Material | Material Rate | Billing Quantity | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/04/2017 | I AR 65117 | Timbers | Other | | Pressure-Treated Wood | F | 18.91 TN | | | |
| 10/04/2017 | I AR 65119 | Timbers | Other | | Pressure-Treated Wood | F | 26.22 TN | | | |
| 10/04/2017 | I AR 65128 | Timbers | Other | | Pressure-Treated Wood | F | 20.16 TN | | | |

Tickets 3 Items Reported: 3

Customer Totals:

| Material Summary | Weight Inbound | Weight Outbound | Volume Inbound | Volume Outbound | Count Inbound | Count Outbound | Billing Quantity | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| PT - Pressure-Treated Wood | 65.29 TN | 0.00 | 0.00 YI | 0.00 | 0.00 | 0.00 | 65.29 TN | | | |

# Detail Customer Activity Report

All Ticket Types

October 05, 2017 to October 05, 2017

* - Confirmed Qty Applied to Billing

Current Tickets Only

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

| Ticket Date | Facility & Ticket Number | Contract | Truck # | Container | Material | Material Rate | Billing Quantity | | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/05/2017 | I AR 65238 | Timbers | RB 93 | | Pressure-Treated Wood | | 16.99 | TN | | | |
| 10/05/2017 | I AR 65247 | Timbers | RB 92 | | Pressure-Treated Wood | | 15.69 | TN | | | |
| 10/05/2017 | I AR 65271 | Timbers | Gurrisi 7 | | Pressure-Treated Wood | | 15.23 | TN | | | |
| 10/05/2017 | I AR 65279 | Timbers | Other | | Pressure-Treated Wood | | 17.86 | TN | | | |
| 10/05/2017 | I AR 65282 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 17.78 | TN | | | |
| 10/05/2017 | I AR 65294 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 22.17 | TN | | | |
| 10/05/2017 | I AR 65311 | Timbers | Other | | Pressure-Treated Wood | | 27.12 | TN | | | |
| 10/05/2017 | I AR 65312 | Timbers | RB 93 | | Pressure-Treated Wood | | 23.15 | TN | | | |
| 10/05/2017 | I AR 65329 | Timbers | Gurrisi 7 | | Pressure-Treated Wood | | 18.13 | TN | | | |
| 10/05/2017 | I AR 65352 | Timbers | RB 92 | | Pressure-Treated Wood | | 18.57 | TN | | | |
| 10/05/2017 | I AR 65359 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 21.88 | TN | | | |
| 10/05/2017 | I AR 65367 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 23.42 | TN | | | |

Tickets 12 Items Reported: 12

Customer Totals:

| Material Summary | Weight Inbound | Weight Outbound | | Volume Inbound | Volume Outbound | | Count Inbound | Count Outbound | Billing Quantity | | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PT - Pressure-Treated Wood | 237.99 | 0.00 | TN | 0.00 | 0.00 | YD | 0.00 | 0.00 | 237.99 | TN | | | |

# Detail Customer Activity Report

All Ticket Types

October 06, 2017 to October 06, 2017

* - Confirmed Qty Applied to Billing

Current Tickets Only

Specific Customer(s) : 1284

All Facilities

001284- JR Vinagro

| Ticket Date | Facility & Ticket Number | Contract | Truck # | Container | Material | Material Rate | Billing Quantity | | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/06/2017 | I AR 65387 | Timbers | RB 93 | | Pressure-Treated Wood | | 20.67 | TN | | | |
| 10/06/2017 | I AR 65390 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 20.80 | TN | | | |
| 10/06/2017 | I AR 65395 | Timbers | RB 91 | | Pressure-Treated Wood | | 15.71 | TN | | | |
| 10/06/2017 | I AR 65409 | Timbers | Gurrisi 7 | | Pressure-Treated Wood | | 18.09 | TN | | | |
| 10/06/2017 | I AR 65424 | Timbers | Other | | Pressure-Treated Wood | | 23.39 | TN | | | |
| 10/06/2017 | I AR 65434 | Timbers | RB 93 | | Pressure-Treated Wood | | 21.40 | TN | | | |
| 10/06/2017 | I AR 65443 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 22.37 | TN | | | |
| 10/06/2017 | I AR 65465 | Timbers | RB 91 | | Pressure-Treated Wood | | 17.98 | TN | | | |
| 10/06/2017 | I AR 65483 | Timbers | Gurrisi 7 | | Pressure-Treated Wood | | 13.68 | TN | | | |
| 10/06/2017 | I AR 65492 | Timbers | RB 93 | | Pressure-Treated Wood | | 14.69 | TN | | | |
| 10/06/2017 | I AR 65503 | Timbers | Gurrisi Trucking | | Pressure-Treated Wood | | 19.88 | TN | | | |
| 10/06/2017 | I AR 65521 | Timbers | RB 91 | | Pressure-Treated Wood | | 17.67 | TN | | | |

Tickets 12 Items Reported: 12

Customer Totals:

| Material Summary | Weight Inbound | Weight Outbound | | Volume Inbound | Volume Outbound | | Count Inbound | Count Outbound | Billing Quantity | | Material Total | Tax Total | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PT - Pressure-Treated Wood | 226.33 | 0.00 | TN | 0.00 | 0.00 | YD | 0.00 | 0.00 | 226.33 | TN | | | |

# AGGREGATE RECYCLING CORPORATION
## Detail Contract Activity Report

All Ticket Types | December 01, 2017 to February 13, 2018

* - Confirmed Qty Applied to Billing

Specific Contract(s) : 'Wynn Casino - Everett'

History and Waiting

All Facilities

Wynn Casino - Everett

| Ticket Date | Facility & Ticket Number | Customer | Truck | Material | Billing Quantity | | Ordered Quantity | |
|---|---|---|---|---|---|---|---|---|
| 12/22/2017 | I AR 73153 | 001003 - Charter Contracting Compar | SWS 507 | Wood Timbers | 9.08 | TN | 0.00 | dedeucted - barge debris |
| 12/27/2017 | I AR 73341 | 001003 - Charter Contracting Compar | SWS 503 | Wood Timbers | 11.54 | TN | 0.00 | dedeucted - barge debris |
| 12/29/2017 | I AR 73555 | 001003 - Charter Contracting Compar | SWS 507 | Wood Timbers | 6.86 | TN | 0.00 | |
| 01/02/2018 | I AR 73682 | 001003 - Charter Contracting Compar | SWS 506 | Wood Timbers | 11.98 | TN | 0.00 | |
| 01/03/2018 | I AR 73761 | 001003 - Charter Contracting Compar | SWS 504 | Wood Timbers | 5.69 | TN | 0.00 | |
| 01/10/2018 | I AR 74243 | 001003 - Charter Contracting Compar | SWS 507 | Wood Timbers | 8.00 | TN | 0.00 | |
| 01/15/2018 | I AR 74525 | 001003 - Charter Contracting Compar | SWS 506 | Wood Timbers | 12.48 | TN | 0.00 | |
| 01/18/2018 | I AR 74878 | 001003 - Charter Contracting Compar | SWS 507 | Wood Timbers | 11.64 | TN | 0.00 | |
| 01/22/2018 | I AR 75091 | 001003 - Charter Contracting Compar | SWS 506 | Wood Timbers | 11.57 | TN | 0.00 | |
| 01/29/2018 | I AR 75567 | 001003 - Charter Contracting Compar | SWS 507 | Wood Timbers | 12.89 | TN | 0.00 | |
| 01/29/2018 | I AR 75614 | 001003 - Charter Contracting Compar | SWS 507 | Wood Timbers | 8.52 | TN | 0.00 | |

Tickets Reported: 11 Items Reported: 11 Contract Totals:

| Material Summary | Weight Inbound | Weight Outbound | | Volume Inbound | Volume Outbound | | Count Inbound | Count Outbound | | |
|---|---|---|---|---|---|---|---|---|---|---|
| WT - Wood Timbers | 110.25 | 0.00 | TN | 0.00 | 0.00 | YD | 0.00 | 0.00 | 110.25 | TN |

507

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:** 12-22-17

Name of Transporter: Shipyard Waste Solutions Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 12/22 Time: 9:37 Fac. Sig: ARC Revelbe DT / 3X / 10W 9.08

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 73153 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 9:38 am 12/22/17 | 10:07 am 12/22/17 | SWS 507 | Roll Off |

| REFERENCE | Wynn Casino - Everett |
|---|---|
| 6179-1 SPS New England - 95 Behen St. - | |

**1003**
**Charter Contracting Company, LLC**
**500 Harrison Avenue Suite 404R**
**Boston, MA 02118**

| | | | |
|---|---|---|---|
| **GROSS:** | 57260 lbs | Scale In | Invoice |
| **TARE:** | 39100 lbs | Scale Out | Inbound |
| **NET Wt:** | 18160 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **9.08** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 73341 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 7:57 am 12/27/17 | 8:24 am 12/27/17 | SWS 503 | Roll Off |

| REFERENCE | SWS |
|---|---|
| 6179-1 SPS New England - 95 Behen St. - | |

1002
Shipyard Waste Solutions
PO Box 546
Eliot, ME 03903

Charter

| | | | |
|---|---|---|---|
| GROSS: | 60860 lbs | Scale In | Invoice |
| TARE: | 37780 lbs | Scale Out | Inbound |
| NET Wt: | 23080 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| 11.54 | TN | Wood Pilings | | |
| 1.00 | | State of Maine Fee - $2 per Ton | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 73555 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 1:30 pm 12/29/17 | 1:40 pm 12/29/17 | SWS 507 | Roll Off |

| REFERENCE | SWS |
|---|---|
| 6179-1 SPS New England - 95 Behen St. - | |

**1002**
**Shipyard Waste Solutions**
**PO Box 546**
**Eliot, ME 03903**

Charter

| | | | |
|---|---|---|---|
| **GROSS:** | 51680 lbs | Scale In | Invoice |
| **TARE:** | 37960 lbs | Scale Out | Inbound |
| **NET Wt:** | 13720 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **6.86** | **TN** | **Wood Pilings** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:** 12-29-17

Name of Transporter: Shipyard Waste Solutions Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

| | | | | circle one below |
|---|---|---|---|---|
| Load 1> | Date: 12/29 | Time: 1:30 | Fac. Sig: ARC | DT / 3X / 10W 686 |
| Load 2> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |
| Load 3> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |
| Load 4> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 73682 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 3:59 pm 01/02/18 | 4:11 pm 01/02/18 | SWS 506 | Roll Off |

| REFERENCE | Wynn Casino - Everett |
|---|---|
| | |

**1003**
**Charter Contracting Company, LLC**
**500 Harrison Avenue Suite 404R**
**Boston, MA 02118**

| | | | |
|---|---|---|---|
| **GROSS:** | 63520 lbs | Scale In | Invoice |
| **TARE:** | 39560 lbs | Scale Out | Inbound |
| **NET Wt:** | 23960 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **11.98** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

SIGNATURE:

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:** 12/29/17

Name of Transporter: Shipyard waste Truck Name & No: 506

Truck/Tractor Registration: 960327 Trailer Registration: ~~960327~~

circle one below

Load 1> Date: 1/2/18 Time: 3:59 Fac. Sig: ARC [signature] DT / 3X / 10W 11.98

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 73761 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 12:47 pm 01/03/18 | 12:59 pm 01/03/18 | SWS 504 | Roll Off |

| REFERENCE | Wynn Casino - Everett |
|---|---|
| | |

**1003**
**Charter Contracting Company, LLC**
**500 Harrison Avenue Suite 404R**
**Boston, MA 02118**

| | | | |
|---|---|---|---|
| **GROSS:** | 51400 lbs | Scale In | Invoice |
| **TARE:** | 40020 lbs | Scale Out | Inbound |
| **NET Wt:** | 11380 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **5.69** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

RC

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

# CHARTER CONTRACTING COMPANY, LLC

# MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:** 1/3/18

Name of Transporter: Shipperd Truck Name & No: 504

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1/3/18 Time: 11:30 Fac. Sig: ARC Webb DT / 3X / 10W 5.69

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 74243 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 2:35 pm 01/10/18 | 2:36 pm 01/10/18 | SWS 507 | Roll Off |

| REFERENCE | Wynn Casino - Everett |
|---|---|
| | |

**1003**
**Charter Contracting Company, LLC**
**500 Harrison Avenue Suite 404R**
**Boston, MA 02118**

| | | | |
|---|---|---|---|
| **GROSS:** | 55560 lbs | Man. Wt. In | Invoice |
| **TARE:** | 39560 lbs | Man. Wt. Out | Inbound |
| **NET Wt:** | 16000 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **8.00** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:**

Name of Transporter: Shipyard Waste Solutions Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1-10-18 Time: 1:04 PM Fac. Sig: ARC Dougherty DT / 3X / 10W 8.00

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| [illegible] | 74525 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 7:47 am 01/15/18 | 8:49 am 01/15/18 | SWS 506 | Roll Off |
| REFERENCE | | | Wynn Casino - Everett |
| | | | |

**1003**
**Charter Contracting Company, LLC**
**500 Harrison Avenue Suite 404R**
**Boston, MA 02118**

| | | | |
|---|---|---|---|
| **GROSS:** | 65640 lbs | Scale In | Invoice |
| **TARE:** | 40680 lbs | Scale Out | Inbound |
| **NET Wt:** | 24960 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| 12.48 | TN | **Wood Timbers** | | |
| 1.00 | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 74878 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 12:35 pm 01/18/18 | 12:36 pm 01/18/18 | SWS 507 | Roll Off |

| REFERENCE | Wynn Casino - Everett |
|---|---|
| | |

**1003**
**Charter Contracting Company, LLC**
**500 Harrison Avenue Suite 404R**
**Boston, MA 02118**

| | | | |
|---|---|---|---|
| **GROSS:** | 62920 lbs | Man. Wt. In | Invoice |
| **TARE:** | 39640 lbs | Man. Wt. Out | Inbound |
| **NET Wt:** | 23280 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **11.64** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

SIGNATURE:

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers** / piles

**E. TRANSPORTER INFORMATION** **Date of shipment:** 1-15-18

Name of Transporter: Shipyard waste Truck Name & No: 506

Truck/Tractor Registration: 960327 Trailer Registration:

circle one below

Load 1> Date: 1/15 Time: 7:46 Fac. Sig: ARC RWebber DT / 3X / 10W 12.48

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** ~~Timbers~~ Wood Piles

**E. TRANSPORTER INFORMATION** **Date of shipment:** 01/18/18

Name of Transporter: Shipyard Waste Sol Truck Name & No: 507

Truck/Tractor Registration: 507 Trailer Registration:

circle one below

Load 1> Date: 1/18 Time: 12:35 Fac. Sig: ARC Rubble DT / 3X / 10W 11.64

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

1002
Shipyard Waste Solutions
PO Box 546
Eliot, ME 03903

Charter

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 75091 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 11:37 am 01/22/18 | 11:48 am 01/22/18 | SWS 506 | Roll Off |

| REFERENCE | SWS |
|---|---|
| 6179-1 SPS New England - 95 Behen St. - | Wynn |

| | | | |
|---|---|---|---|
| **GROSS:** | 61960 lbs | Scale In | Invoice |
| **TARE:** | 38820 lbs | Scale Out | Inbound |
| **NET Wt:** | 23140 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **11.57** | **TN** | **Wood Pilings** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:** 1-22-18

Name of Transporter: shipyard waste Truck Name & No: 506

Truck/Tractor Registration: 960327 Trailer Registration: N/A

| | | | | circle one below |
|---|---|---|---|---|
| Load 1> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |
| Load 2> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |
| Load 3> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |
| Load 4> | Date: | Time: | Fac. Sig: | DT / 3X / 10W |

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 75567 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 8:14 am 01/29/18 | 8:28 am 01/29/18 | SWS 507 | Roll Off |

| REFERENCE | Creosote Wood Timbers |
|---|---|
| 6179-1 SPS New England - 95 Behen St. - | |

**1331**
**SPS New England Inc.**
**98 Elm Street**
**Salisbury, MA 01952**

Charter

| | | | |
|---|---|---|---|
| **GROSS:** | 64960 lbs | Scale In | Invoice |
| **TARE:** | 39180 lbs | Scale Out | Inbound |
| **NET Wt:** | 25780 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **12.89** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:**

Name of Transporter: Shipyard Waste Sol Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1/29 Time: 8:14 Fac. Sig: ARC DT / 3X / 10W 12.89

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

Aggregate Recycling Corporation
PO Box 363
434 Dow Highway
Eliot, ME 03903
PH: 207-439-5584 FAX: 207-439-5586

ARC

| SITE | TICKET | WEIGHMASTER |
|---|---|---|
| AR | 75614 | RODW |

| DATE IN | DATE OUT | VEHICLE | DESCRIPTION / CONTAINER |
|---|---|---|---|
| 11:35 am 01/29/18 | 11:47 am 01/29/18 | SWS 507 | Roll Off |

| REFERENCE | Creosote Wood Timbers |
|---|---|
| 6179-1 SPS New England - 95 Behen St. - | |

**1331**
**SPS New England Inc.**
**98 Elm Street**
**Salisbury, MA 01952**

Charter

| | | | |
|---|---|---|---|
| **GROSS:** | 56400 lbs | Scale In | Invoice |
| **TARE:** | 39360 lbs | Scale Out | Inbound |
| **NET Wt:** | 17040 lbs | | |

| QUANTITY | UNIT | DESCRIPTION | RATE | TOTAL |
|---|---|---|---|---|
| **8.52** | **TN** | **Wood Timbers** | | |
| **1.00** | | **State of Maine Fee - $2 per Ton** | | |

Thank you for your business!
Mon - Fri 7:30am to 4:30pm Spring/Summer
Mon - Fri 7:30am to 4:00pm Fall/Winter

| | |
|---|---|
| NET TOTAL | |
| TENDERED | |
| CHANGE | |
| CHECK NO. | |

SIGNATURE:

# CHARTER CONTRACTING COMPANY, LLC

## MATERIAL SHIPPING RECORD & LOG

**PWO:** 2-1627

**A. GENERATOR / SITE INFORMATION**

Organization Name: **WYNN MA LLC**

Site Info: **Wynn Casino Dredge Project**

**B. TRANSPORTER / COMMON CARRIER INFORMATION**

Transporter / Common Carrier Name: Charter Contracting Company, LLC

Contact Person: Jon Simpson

Street, City / State / Zip Code: 500 Harrison Ave, Boston MA 02118

**C. RECEIVING FACILTY INFORMATION**

Operator / Facilty Name: **Aggregate Recycling Corp**

Facilty Contact: John Doherty 207-439-5584

**D. DESCRIPTION OF MATERIAL** **Timbers**

**E. TRANSPORTER INFORMATION** **Date of shipment:** 1-29-18

Name of Transporter: Shi'oyandhaste Sal Truck Name & No: 507

Truck/Tractor Registration: Trailer Registration:

circle one below

Load 1> Date: 1/29 Time: 11:35 Fac. Sig: ARC RWebber DT / 3X / 10W 8.52

Load 2> Date: Time: Fac. Sig: DT / 3X / 10W

Load 3> Date: Time: Fac. Sig: DT / 3X / 10W

Load 4> Date: Time: Fac. Sig: DT / 3X / 10W

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD
2. Street Address: 1 HORIZON WAY
3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

## B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☐ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other _____

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 10/23/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 965815

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 1/22/2018 (mm/dd/yyyy)

**(All sections of this transmittal form must be filled out unless otherwise noted above)**

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

## C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other: _____

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other: _____

## C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

## D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: PC TRUCKING, INC.

2. Contact First Name: JOYCE 3. Last Name: POLCARO

4. Street: 15 ELLINGTON RD 5. Title: PRESIDENT

6. City/Town: TEWKSBURY 7. State: MA 8. Zip Code: 018760000

9. Telephone: 9788514467 10. Ext: _____ 11. Email: pctrucking@comcast.net

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WM OF ME - CROSSROADS LANDFILL
2. Contact First Name: ELLEN 3. Last Name: BELLIO
4. Street: 357 MERCER ROAD 5. Title: WASTE APPROVALS MANAGER
6. City/Town: NORRIDGEWOCK 7. State: ME 8. Zip Code: 049570000
9. Telephone: 2076342714 10. Ext: 11. Email:
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number: S-010735-WD-QO-M, S-010735-WD-IF-N
15. EPA Identification Number:

## F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: _____ (mm/dd/yyyy)

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☑ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnresorts.com

## H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship: _____

## I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

## J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

**J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :**

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

**YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.**

Date Stamp (MassDEP USE ONLY):

**Received by DEP on 4/17/2018 1:37:08 PM**

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**SUMMARY OF SHIPMENT SHEET** 1 **OF** 2

**BWSC 112A**

Release Tracking Number
3 - 13341

**A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):**

| 1. Date of Shipment: (mm/dd/yyyy) | 2. Date of Receipt: (mm/dd/yyyy) | 3. Number of Loads Shipped: | 4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals |
|---|---|---|---|
| 10/30/2017 | 10/30/2017 | 6 | 186.72 |
| 10/31/2017 | 10/31/2017 | 4 | 127.19 |
| 11/1/2017 | 11/1/2017 | 4 | 133.46 |
| 11/2/2017 | 11/2/2017 | 5 | 159.96 |
| 11/3/2017 | 11/3/2017 | 7 | 244.71 |
| 11/6/2017 | 11/6/2017 | 10 | 336.79 |
| 11/7/2017 | 11/7/2017 | 17 | 554.22 |
| 11/8/2017 | 11/8/2017 | 16 | 517.05 |
| 11/9/2017 | 11/9/2017 | 22 | 723.32 |
| 11/10/2017 | 11/10/2017 | 21 | 695.14 |
| 11/13/2017 | 11/13/2017 | 14 | 469.18 |
| 11/14/2017 | 11/14/2017 | 15 | 512.04 |
| 11/15/2017 | 11/15/2017 | 20 | 656.06 |
| 11/16/2017 | 11/16/2017 | 22 | 689.63 |
| 11/17/2017 | 11/17/2017 | 29 | 891.37 |
| 11/21/2017 | 11/21/2017 | 5 | 159.35 |
| 11/22/2017 | 11/22/2017 | 16 | 515.53 |
| 11/24/2017 | 11/24/2017 | 14 | 449.66 |
| 11/27/2017 | 11/27/2017 | 12 | 382.7 |
| 11/29/2017 | 11/29/2017 | 16 | 518.49 |
| 5. Totals Recorded on this Summary of Shipment Sheet: | | 275 | 8922.57 |

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**SUMMARY OF SHIPMENT SHEET** 2 **OF** 2

**BWSC 112A**

Release Tracking Number
3 - 13341

**A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):**

| 1. Date of Shipment: (mm/dd/yyyy) | 2. Date of Receipt: (mm/dd/yyyy) | 3. Number of Loads Shipped: | 4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals |
|---|---|---|---|
| 11/30/2017 | 11/30/2017 | 11 | 375.33 |
| 12/1/2017 | 12/1/2017 | 15 | 493.16 |
| 12/4/2017 | 12/4/2017 | 18 | 577.9 |
| 12/5/2017 | 12/5/2017 | 19 | 628.06 |
| 12/6/2017 | 12/6/2017 | 12 | 392.28 |
| 12/7/2017 | 12/7/2017 | 16 | 523.39 |
| 12/8/2017 | 12/8/2017 | 20 | 645.45 |
| 12/11/2017 | 12/11/2017 | 11 | 350.01 |
| 12/12/2017 | 12/12/2017 | 14 | 442.91 |
| 12/13/2017 | 12/13/2017 | 11 | 350.35 |
| 12/14/2017 | 12/14/2017 | 11 | 365.46 |
| 12/15/2017 | 12/15/2017 | 15 | 488.98 |
| 12/19/2017 | 12/19/2017 | 12 | 403.1 |
| 12/20/2017 | 12/20/2017 | 17 | 537.15 |
| 12/21/2017 | 12/21/2017 | 11 | 372.05 |
| 12/22/2017 | 12/22/2017 | 6 | 198.51 |
| 12/28/2017 | 12/28/2017 | 7 | 227.31 |
| 1/2/2018 | 1/2/2018 | 3 | 98.01 |
| 1/3/2018 | 1/3/2018 | 12 | 401.95 |
| 1/4/2018 | 1/4/2018 | 3 | 101.08 |
| 5. Totals Recorded on this Summary of Shipment Sheet: | | 244 | 7972.44 |

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BWSC 112B**

Release Tracking Number
3 - 13341

**BILL OF LADING (pursuant to 310 CMR 40.0030)**
**SUMMARY SHEET SIGNATURE PAGE**

**A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:**

1. I, JEFF MCGOWN, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: JEFF MCGOWN 3. Title: DISTRICT MANAGER

4. For: WASTE MGMT OF ME (CROSSROADS) 5. Date: 4/12/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 11/30/2017 (mm/dd/yyyy)

**B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:**

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 4/17/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD

2. Street Address: 1 HORIZON WAY

3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

## B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☐ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other _____

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 10/20/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 965493

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 1/22/2018 (mm/dd/yyyy)

**(All sections of this transmittal form must be filled out unless otherwise noted above)**

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

## C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other: _____

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other: _____

## C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

## D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: CHARTER CONTRACTING CO LLC

2. Contact First Name: JON 3. Last Name: SIMPSON

4. Street: 500 HARRISON AVENUE, 4R 5. Title: PROJECT MANAGER

6. City/Town: BOSTON 7. State: MA 8. Zip Code: 021180000

9. Telephone: 8572466801 10. Ext: _____ 11. Email: jsimpson@charter.us

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WM OF ME - CROSSROADS LANDFILL
2. Contact First Name: ELLEN 3. Last Name: BELLIO
4. Street: 357 MERCER ROAD 5. Title: WASTE APPROVALS MANAGER
6. City/Town: NORRIDGEWOCK 7. State: ME 8. Zip Code: 049570000
9. Telephone: 2076342714 10. Ext: 11. Email:
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number:
15. EPA Identification Number:

## F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: (mm/dd/yyyy)

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☑ a. change in contact name ☐ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnresorts.com

## H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

## I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

## J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

**J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :**

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

**YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.**

Date Stamp (MassDEP USE ONLY):

**Received by DEP on 4/17/2018 1:41:29 PM**

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**SUMMARY OF SHIPMENT SHEET** 1 **OF** 2

**BWSC 112A**

Release Tracking Number
3 - 13341

**A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):**

| 1. Date of Shipment: (mm/dd/yyyy) | 2. Date of Receipt: (mm/dd/yyyy) | 3. Number of Loads Shipped: | 4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals |
|---|---|---|---|
| 10/26/2017 | 10/26/2017 | 15 | 486.78 |
| 10/27/2017 | 10/27/2017 | 9 | 290.14 |
| 1/8/2018 | 1/8/2018 | 13 | 431.15 |
| 1/9/2018 | 1/9/2018 | 8 | 260.98 |
| 1/10/2018 | 1/10/2018 | 10 | 324.67 |
| 1/11/2018 | 1/11/2018 | 13 | 437.84 |
| 1/12/2018 | 1/12/2018 | 10 | 332.94 |
| 1/15/2018 | 1/15/2018 | 22 | 743.55 |
| 1/16/2018 | 1/16/2018 | 21 | 705.83 |
| 1/17/2018 | 1/17/2018 | 17 | 565.08 |
| 1/18/2018 | 1/18/2018 | 13 | 425.57 |
| 1/19/2018 | 1/19/2018 | 12 | 414.66 |
| 1/22/2018 | 1/22/2018 | 21 | 693.41 |
| 1/23/2018 | 1/23/2108 | 17 | 567.72 |
| 1/24/2018 | 1/24/2018 | 7 | 229.58 |
| 1/25/2018 | 1/25/2018 | 3 | 106.33 |
| 1/26/2018 | 1/26/2018 | 2 | 66.07 |
| 1/29/2018 | 1/29/2018 | 5 | 166.3 |
| 1/30/2018 | 1/30/2018 | 2 | 66.93 |
| 1/31/2018 | 1/31/2018 | 4 | 133.84 |
| 5. Totals Recorded on this Summary of Shipment Sheet: | | 224 | 7449.37 |

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**SUMMARY OF SHIPMENT SHEET** 2 **OF** 2

**BWSC 112A**

Release Tracking Number
3 - 13341

**A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):**

| 1. Date of Shipment: (mm/dd/yyyy) | 2. Date of Receipt: (mm/dd/yyyy) | 3. Number of Loads Shipped: | 4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals |
|---|---|---|---|
| 2/1/2018 | 2/1/2018 | 1 | 33.48 |
| 2/6/2018 | 2/6/2018 | 1 | 32.47 |
| 2/7/2018 | 2/7/2018 | 1 | 30.4 |
| 2/21/2018 | 2/21/2018 | 1 | 14.17 |
| 2/22/2018 | 2/22/2018 | 1 | 17.07 |
| 2/27/2018 | 2/27/2018 | 2 | 30.25 |
| 2/28/2018 | 2/28/2018 | 6 | 151.11 |
| 3/1/2018 | 3/1/2018 | 3 | 93.48 |
| 3/2/2018 | 3/2/2018 | 1 | 15.06 |
| 3/20/2018 | 3/20/2108 | 2 | 58.69 |
| 3/21/2018 | 3/21/2018 | 1 | 36.85 |
| 3/23/2018 | 3/23/2018 | 4 | 145.61 |
| 3/29/2018 | 3/29/2018 | 1 | 31.3 |
| 3/30/2018 | 3/30/2018 | 1 | 21.8 |
| 5. Totals Recorded on this Summary of Shipment Sheet: | | 26 | 711.74 |

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BWSC 112B**

Release Tracking Number
3 - 13341

**BILL OF LADING (pursuant to 310 CMR 40.0030)**
**SUMMARY SHEET SIGNATURE PAGE**

**A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:**

1. I, JEFF MCGOWN, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: JEFF MCGOWN 3. Title: DISTRICT MANAGER

4. For: WASTE MGMT OF ME (CROSSROADS) 5. Date: 4/12/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 1/17/2018 (mm/dd/yyyy)

**B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:**

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 4/17/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD
2. Street Address: 1 HORIZON WAY
3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

## B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility. Response Actions associated with this BOL (check all that apply):

- ☐ a. Immediate Response Action (IRA)
- ☐ b. Release Abatement Measure (RAM)
- ☐ c. Downgradient Property Status (DPS)
- ☐ d. Utility Release Abatement Measure (URAM)
- ☐ e. Comprehensive Response Actions
- ☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
- ☐ g. Other

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 11/8/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 969559

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 3/20/2018 (mm/dd/yyyy)

**(All sections of this transmittal form must be filled out unless otherwise noted above)**

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

## C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other:

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other:

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

## D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: CHARTER CONTRACTING CO LLC

2. Contact First Name: JON 3. Last Name: SIMPSON

4. Street: 500 HARRISON AVENUE, 4R 5. Title: PROJECT MANAGER

6. City/Town: BOSTON 7. State: MA 8. Zip Code: 021180000

9. Telephone: 8572466801 10. Ext: _____ 11. Email: jsimpson@charter.us

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: SUNNY FARMS LANDFILL
2. Contact First Name: MICHAEL 3. Last Name: KOZAK
4. Street: 12500 W COUNTY RD 18 5. Title: SENIOR VICE PRESIDENT
6. City/Town: FOSTORIA 7. State: OH 8. Zip Code: 448300000
9. Telephone: 4194360505 10. Ext: 11. Email: mkozak@tunnelhillpartners.com
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number: OHIO EPA PTI 676460
15. EPA Identification Number:

## F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: (mm/dd/yyyy)

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☑ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnmass.com

## H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

## I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

## J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

**J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :**

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

**YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.**

Date Stamp (MassDEP USE ONLY):

**Received by DEP on 6/14/2018 10:37:43 AM**

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**SUMMARY OF SHIPMENT SHEET** 1 **OF** 2

**BWSC 112A**

Release Tracking Number
3 - 13341

**A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):**

| 1. Date of Shipment: (mm/dd/yyyy) | 2. Date of Receipt: (mm/dd/yyyy) | 3. Number of Loads Shipped: | 4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals |
|---|---|---|---|
| 11/10/2017 | 11/22/2017 | 15 | 494.11 |
| 11/13/2017 | 12/6/2017 | 15 | 527.55 |
| 11/14/2017 | 12/6/2017 | 24 | 854.82 |
| 11/15/2017 | 12/6/2017 | 9 | 313.76 |
| 11/21/2017 | 11/29/2017 | 15 | 512.7 |
| 11/22/2017 | 11/30/2017 | 12 | 424.9 |
| 11/27/2017 | 12/16/2017 | 9 | 303.86 |
| 11/29/2017 | 12/16/2017 | 9 | 315.40 |
| 11/30/2017 | 12/16/2017 | 9 | 322.08 |
| 12/1/2017 | 12/16/2017 | 9 | 320.29 |
| 12/4/2017 | 12/16/2017 | 9 | 311.74 |
| 12/5/2017 | 12/16/2017 | 9 | 311.54 |
| 12/6/2017 | 12/16/2017 | 9 | 309.94 |
| 12/7/2017 | 12/16/2017 | 15 | 508.2 |
| 12/11/2017 | 12/20/2017 | 12 | 405.78 |
| 12/11/2017 | 12/22/2017 | 3 | 98.72 |
| 12/12/2017 | 12/22/2017 | 9 | 292.66 |
| 12/13/2017 | 12/19/2017 | 9 | 292.03 |
| 12/13/2017 | 1/8/2018 | 6 | 183.51 |
| 12/14/2017 | 1/8/2018 | 15 | 530.35 |
| 5. Totals Recorded on this Summary of Shipment Sheet: | | 222 | 7633.94 |

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**SUMMARY OF SHIPMENT SHEET** 2 **OF** 2

**BWSC 112A**

Release Tracking Number
3 - 13341

**A. SUMMARY OF SHIPMENT (To be filled out by the receiving facility upon receipt of Remediation Waste):**

| 1. Date of Shipment: (mm/dd/yyyy) | 2. Date of Receipt: (mm/dd/yyyy) | 3. Number of Loads Shipped: | 4. Daily Volume Shipped: ☐ yds3 ☑ tons ☐ gals |
|---|---|---|---|
| 12/15/2017 | 12/21/2017 | 3 | 106.51 |
| 12/15/2017 | 1/8/2018 | 6 | 205.75 |
| 12/19/2017 | 1/8/2018 | 15 | 533.47 |
| 12/20/2017 | 1/8/2018 | 15 | 530.01 |
| 12/21/2017 | 1/8/2018 | 15 | 523.56 |
| 12/22/2017 | 1/8/2018 | 12 | 401.21 |
| 12/27/2017 | 1/8/2018 | 12 | 419.05 |
| 12/28/2017 | 1/11/2018 | 9 | 309.96 |
| 12/29/2017 | 1/11/2018 | 6 | 211.07 |
| 1/2/2018 | 1/11/2018 | 9 | 316.57 |
| 1/3/2018 | 1/15/2018 | 9 | 313.60 |
| 1/15/2018 | 1/24/2018 | 9 | 320.18 |
| 5. Totals Recorded on this Summary of Shipment Sheet: | | 120 | 4190.94 |

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**
**SUMMARY SHEET SIGNATURE PAGE**

**BWSC 112B**

Release Tracking Number
3 - 13341

**A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:**

1. I, MICHAEL KOZAK, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: MICHAEL KOZAK 3. Title:

4. For: TUNNEL HILL PARTNERS 5. Date: 5/30/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 1/15/2018 (mm/dd/yyyy)

**B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:**

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 6/14/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## A. LOCATION OF SITE OR DISPOSAL SITE WHERE REMEDIATION WASTE WAS GENERATED:

1. Release Name/Location Aid: EVERETT STAGING YARD
2. Street Address: 1 HORIZON WAY
3. City/Town: EVERETT 4. Zip Code: 021490000

☑ 5. Check here if the disposal site that is the source of the release is Tier Classified. Check the current Tier Classification Category.
☐ a. Tier I ☐ b. Tier ID ☑ c. Tier II

## B. THIS FORM IS BEING USED TO: (check one: B1-B4):

☐ 1. Submit a **Bill of Lading (BOL)** to transport Remediation Waste to Temporary Storage or a Receiving Facility.
Response Actions associated with this BOL (check all that apply):

☐ a. Immediate Response Action (IRA)
☐ b. Release Abatement Measure (RAM)
☐ c. Downgradient Property Status (DPS)
☐ d. Utility Release Abatement Measure (URAM)
☐ e. Comprehensive Response Actions
☐ f. Limited Removal Action (LRA): (must be retained pursuant to 310 CMR 40.0034(6); can't be submitted via eDEP)
☐ g. Other

☐ 2. Submit an Attestation of Completion of **Shipment to Temporary Storage** (Sections C, F and J are not required):
☑ 3. Submit an Attestation of **Completion of Shipment to a Receiving Facility** (Sections C, F and J are not required):
☐ 4. Certify that Remediation Waste Was **Not Shipped, and the Bill of Lading is Void**. (Sections C, D, E, and F are not required)

5. Date Bill of Lading submitted to the Department: 10/13/2017 (mm/dd/yyyy) b. eDEP Transaction ID: 961891

6. Period of Generation Associated with this Bill of Lading 10/16/2017 (mm/dd/yyyy) to 1/22/2018 (mm/dd/yyyy)

**(All sections of this transmittal form must be filled out unless otherwise noted above)**

The Bill of Lading is not considered complete until the Attestation of Completion of Shipment is received by the Department.

## C. DESCRIPTION OF WASTE AND WASTE SOURCE:

1. Contaminated Media/Debris (check all that apply):

☐ a. Soil ☐ b. Groundwater ☐ c. Surface Water ☐ d. Sediment ☐ e. Vegetation or Organic Debris

☐ f. Demolition/Construction Waste ☐ g. Inorganic Absorbent Materials ☐ h. Other:

2. Uncontainerized Waste (check all that apply):

☐ a. Inorganic Absorbent Materials ☐ b. Other:

## C. DESCRIPTION OF WASTE AND WASTE SOURCE (cont.):

3. Containerized Waste (check all that apply):

☐ a. Tank Bottoms/Sludges ☐ b. Containers ☐ c. Drums ☐ d. Engineered Impoundments

☐ e. Other: _____

4. Estimated Quantity: _____ ☐ Tons ☐ Cu. Yds. ☐ Gallons

5. Contaminant Source (check one):

☐ a. Transportation Accident ☐ b. Underground Storage Tank ☐ c. Brownfields Redevelopment

☐ d. Other: _____

6. Type of Contaminant (check all that apply):

☐ a. Gasoline ☐ b. Diesel Fuel ☐ c. #2 Fuel Oil ☐ d. #4 Fuel Oil ☐ e. #6 Fuel Oil ☐ f. Jet Fuel

☐ g. Waste Oil ☐ h. Kerosene ☐ i. Chlorinated Solvents ☐ j. Urban Fill ☐ k. Other: _____

7. Constituents of Concern (check all that apply):

☐ a. As ☐ b. Cd ☐ c. Cr ☐ d. Pb ☐ e. Hg ☐ f. EPH/TPH ☐ g. VPH

☐ h. PCBs ☐ i. VOCs ☐ j. SVOCs ☐ k. Other: _____

8. If applicable, check the box for the Reportable Concentration Category of the site:

☐ a. RCS-1 ☐ b. RCS-2 ☐ c. RCGW-1 ☐ d. RCGW-2

9. Remediation Waste Characterization Documentation (check at least one):

☐ a. Site History Information ☐ b. Sampling Analytical Methods and Procedures ☐ c. Laboratory Data

☐ d. Field Screening Data ☐ e. Characterization Documentation previously submitted to the Department

i. Date submitted: _____ (mm/dd/yyyy) ii. Type of Documentation: _____

## D. TRANSPORTER OR COMMON CARRIER INFORMATION:

1. Transporter/Common Carrier Name: PC TRUCKING, INC.

2. Contact First Name: JOYCE 3. Last Name: POLCARO

4. Street: 15 ELLINGTON RD 5. Title: PRESIDENT

6. City/Town: TEWKSBURY 7. State: MA 8. Zip Code: 018760000

9. Telephone: 9788514467 10. Ext: _____ 11. Email: _____

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## E. RECEIVING FACILITY/TEMPORARY STORAGE LOCATION:

1. Operator/Facility Name: WM TREE TURNKEY LANDFILL
2. Contact First Name: ELLEN 3. Last Name: BELLIO
4. Street: 90 ROCHESTER NECK ROAD 5. Title: WASTE APPROVALS MANAGER
6. City/Town: ROCHESTER 7. State: NH 8. Zip Code: 038397065
9. Telephone: 8009634776 10. Ext: 11. Email: ebellio@wm.com
12. Type of facility: (check one)

a. Temporary Storage i. Period of Temporary Storage _____ (mm/dd/yyyy) to _____ (mm/dd/yyyy)

ii. Reason for Temporary Storage:

☐ b. Asphalt Batch/Hot Mix ☑ c. Landfill/Disposal ☐ d. Landfill/Structural Fill ☐ e. Landfill/Daily Cover

☐ f. Asphalt Batch/Cold Mix ☐ g. Thermal Processing ☐ h. Incinerator ☐ i. Other:

13. Division of Hazardous Waste/Class A Permit Number:
14. Division of Solid Waste Permit Number: DES-SW-SP-95-001
15. EPA Identification Number:

## F. LSP SIGNATURE AND STAMP:

I attest under the pains and penalties of perjury that I have personally examined and am familiar with this submittal form, including any and all documents accompanying this submittal. In my professional opinion and judgment based upon application of (i) the standard of care in 309 CMR 4.02(1), (ii) the applicable provisions of 309 CMR 4.02(2) and (3), and 309 CMR 4.03(2), and (iii) the provisions of 309 CMR 4.03(3), to the best of my knowledge, information and belief, the assessment action(s) undertaken to characterize the Remediation Waste which is (are) the subject of this submittal for acceptance at the facility identified in this submittal comply with applicable provisions of 310 CMR 40.0000, and such facility is permitted to accept Remediation Waste having the characteristics described in this submittal.

I am aware that significant penalties may result, including, but not limited to, possible fines and imprisonment, if I submit information which I know to be false, inaccurate or materially incomplete.

1. LSP #:
2. First Name: 3. Last Name:
4. Telephone: 5. Ext: 6. Email:
7. Signature: 9. LSP Stamp:
8. Date: (mm/dd/yyyy)

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BILL OF LADING (pursuant to 310 CMR 40.0030)**

**BWSC 112**

Release Tracking Number
3 - 13341

## G. PERSON SUBMITTING BILL OF LADING:

1. Check all that apply: ☐ a. change in contact name ☑ b. change of address ☐ c. change in the person undertaking response actions

2. Name of Organization: WYNN MA LLC

3. Contact First Name: ROBERT 4. Last Name: DESALVIO

5. Street: 101 STATION LANDING FLOOR 2 6. Title: PRESIDENT

7. City/Town: MEDFORD 8. State: MA 9. Zip Code: 021550000

10. Telephone: 8577707000 11. Ext: 12. Email: robert.desalvio@wynnresorts.com

## H. RELATIONSHIP TO SITE OF PERSON SUBMITTING BILL OF LADING:

☐ Check here to change relationship

☑ 1. RP or PRP ☐ a. Owner ☐ b. Operator ☐ c. Generator ☐ d. Transporter

☑ e. Other RP or PRP Specify: ELIGIBLE OWNER/OPERATOR

☐ 2. Fiduciary, Secured Lender or Municipality with Exempt Status (as defined by M.G.L. c. 21E, s. 2)

☐ 3. Agency or Public Utility on a Right of Way (as defined by M.G.L. c. 21E, s. 5(j))

☐ 4. Any Other Person Undertaking Response Actions: Specify Relationship:

## I. REQUIRED ATTACHMENT AND SUBMITTALS:

☐ 1. Check here if the Response Action(s) on which this opinion is based, if any, are (were) subject to any order(s), permit(s) and/or approvals issued by DEP or EPA. If the box is checked, you must attach a statement identifying the applicable provisions thereof.

☐ 2. Check here if any non-updatable information provided on this form is incorrect, e.g. Release Address/Location Aid. Send corrections to BWSC.eDEP@state.ma.us

☐ 3. Check here to certify that the LSP Opinion containing the material facts, data, and other information is attached.

## J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING:

1. I, _____, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: _____ 3. Title: PRESIDENT

4. For: WYNN MA LLC 5. Date: _____
(Name of person or entity recorded in Section G) (mm/dd/yyyy)

**J. CERTIFICATION OF PERSON SUBMITTING BILL OF LADING (cont.) :**

☐ 6. Check here if the address of the person providing certification is different from address recorded in Section G.

7. Street: _____

8. City/Town: _____ 9. State: _____ 10. Zip Code: _____

11. Telephone: _____ 12. Ext: _____ 13. Email: _____

**YOU ARE SUBJECT TO AN ANNUAL COMPLIANCE ASSURANCE FEE OF UP TO $10,000 PER BILLABLE YEAR FOR THIS DISPOSAL SITE. YOU MUST LEGIBLY COMPLETE ALL RELEVANT SECTIONS OF THIS FORM OR DEP MAY RETURN THE DOCUMENT AS INCOMPLETE. IF YOU SUBMIT AN INCOMPLETE FORM, YOU MAY BE PENALIZED FOR MISSING A REQUIRED DEADLINE.**

Date Stamp (MassDEP USE ONLY):

**Received by DEP on 4/17/2018 1:41:58 PM**

**Massachusetts Department of Environmental Protection**
*Bureau of Waste Site Cleanup*

**BWSC 112B**

Release Tracking Number
3 - 13341

**BILL OF LADING (pursuant to 310 CMR 40.0030)**
**SUMMARY SHEET SIGNATURE PAGE**

**A. ACKNOWLEDGEMENT OF RECEIPT OF REMEDIATION WASTE AT RECEIVING FACILITY OR TEMPORARY STORAGE:**

1. I, ROBERT S MAGNUSSON, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT S MAGNUSSON 3. Title:

4. For: WASTE MANAGEMENT OF NH (TREE) 5. Date: 4/15/2018 (mm/dd/yyyy)

6. Date of Final Shipment asociated with this Bill of lading: 11/30/2017 (mm/dd/yyyy)

**B. ACKNOWLEDGEMENT OF SHIPMENT AND RECEIPT OF REMEDIATION WASTE BY PERSON CONDUCTING RESPONSE ACTIONS ASSOCIATED WITH THIS BILL OF LADING:**

1. I, ROBERT DESALVIO, attest under the pains and penalties or perjury (i) that I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this transmittal form, (ii) that, based on my inquiry of those individuals immediately responsible for obtaining the information, the material information contained in this submittal is, to the best of my knowledge and belief, true, accurate and complete, and (iii) that I am fully authorized to make this attestation on behalf of the entity legally responsible for this submittal. I/the person or entity on whose behalf this submittal is made am/is aware that there are significant penalties, including, but not limited to, possible fines and imprisonment, for willfully submitting false, inaccurate, or incomplete information.

2. By: ROBERT DESALVIO 3. Title: PRESIDENT

4. For: WYNN MA LLC (Name of person or entity recorded in Section G) 5. Date: 4/17/2018 (mm/dd/yyyy)

☐ 6. Check here if the address of the person providing certification is different from address recorded in BWSC112 Section G.

7. Street:

8. City/Town: 9. State: 10. Zip Code:

11. Telephone: 12. Ext: 13. Email:

☐ 14. Check here if attaching optional supporting documentation such as copies of Load Information Summary Sheets

# APPENDIX D

Debris Survey

**Debris Survey Report**

| | |
|---|---|
| Project Title: | Wynn Sediment Remediation Project<br>Everett, Massachusetts<br>1 Horizon Way<br>Everett, MA |
| Prepared For: | Danielle Ahern<br>Amec Foster Wheeler<br>271 Mill Road<br>Chelmsford, MA 01824<br>T: 978-692-9090 |
| Prepared By: | Charter Contracting Company, LLC<br>500 Harrison Avenue, Suite 4R<br>Boston, MA 02118<br>T: 857-246-6800 |
| Contract No.: | |
| PWO No.: | 2-1627 |
| Date: | October 10, 2017 |
| Version No.: | 00 |

Helmut Ernst

Helmut Ernst, PE, Project Manager
978-360-6436 E: HErnst@spsnewengland.com

10/10/2017

Date

Katherine M. Mason

Katherine Mason, Project Manager
857-246-6820 E: Kmason@charter.us

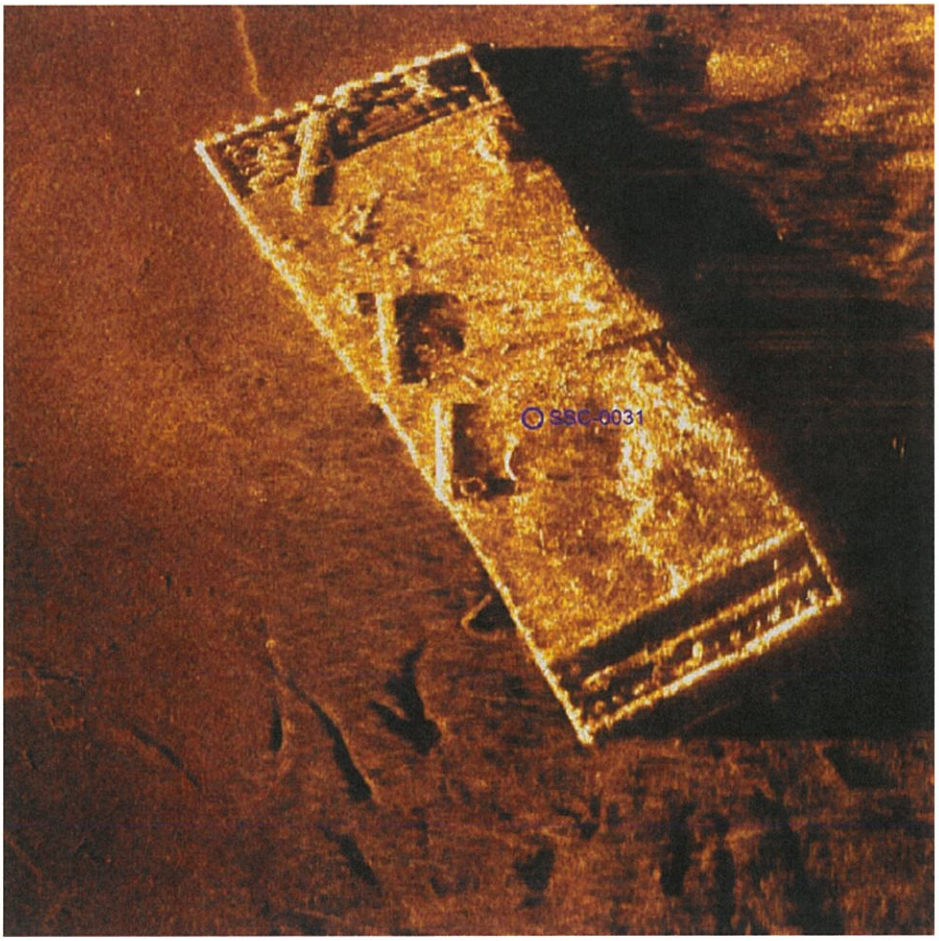
10/10/2017

Date

# Wynn Boston Harbor Sediment Remediation Debris Survey

## Debris Targets Report

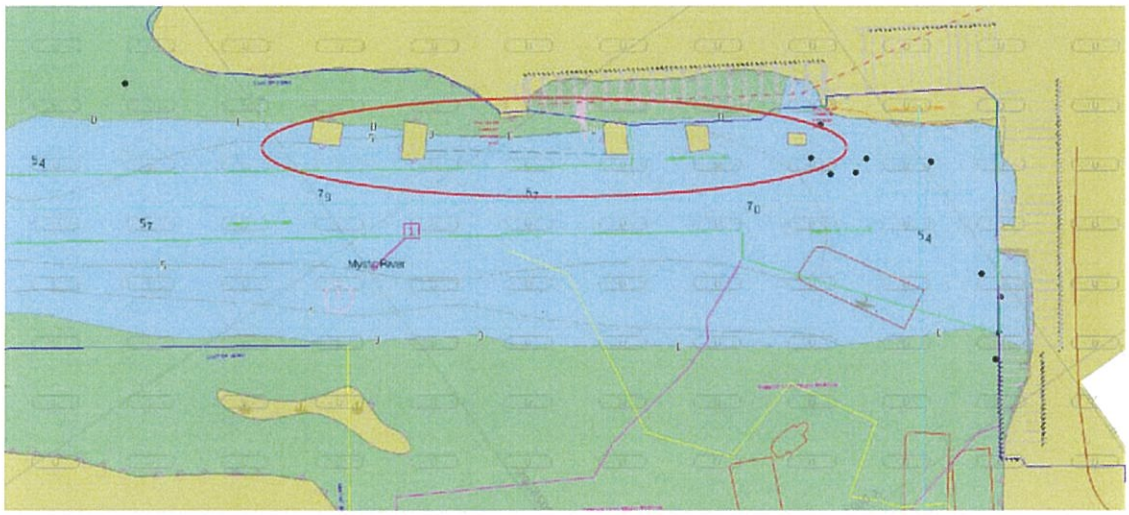
Steele Associates Marine Consultants, LLC.



Wynn Boston Harbor Sediment Remediation Debris Survey

**Background**

Wynn Boston Harbor sits on the former Monsanto Chemical Plant. The Monsanto plant operated a ship terminal to onload/offload in proximity to the proposed berth set to be dredged. This terminal no longer exists and has been demolished but parts of the dolphin's foundations that were used to berth ships are still existing based on the debris survey in proximity to the dredge area. Many of the targets identified in the side scan survey are believed to be associated with the razed dolphins from the Monsanto ship terminal. Throughout the years it is certain that additional debris has accumulated throughout the project area. To determine the extent of the debris Wynn Charter has requested a debris survey to identify debris targets of interest.



Electronic Chart showing Historical Dolphin Alignment

Photo showing Remains of Dolphin Foundations

Wynn Boston Harbor Sediment Remediation Debris Survey

Photo showing Remains of Dolphin Foundations

Historical Photo of Monsanto Terminal

Historical photo of Ship berthed at Monsanto Terminal

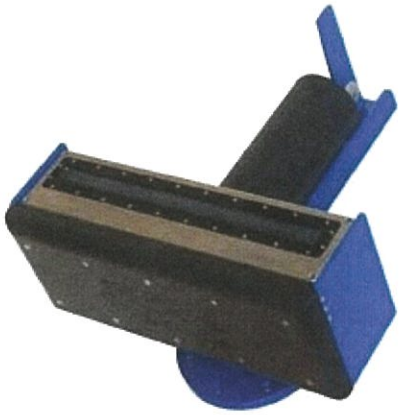
Wynn Boston Harbor Sediment Remediation Debris Survey

**Data Collection**

Steele Associates conducted the Before Dredge survey according to Army Corps specification with a 200 kHz multi-beam survey of the project area. A 900 kHz side scan survey was collected for the purpose of locating, identifying, measuring, and imaging of debris targets, in addition the 200 kHz multi-beam survey data aided to confirm the side scan imagery.

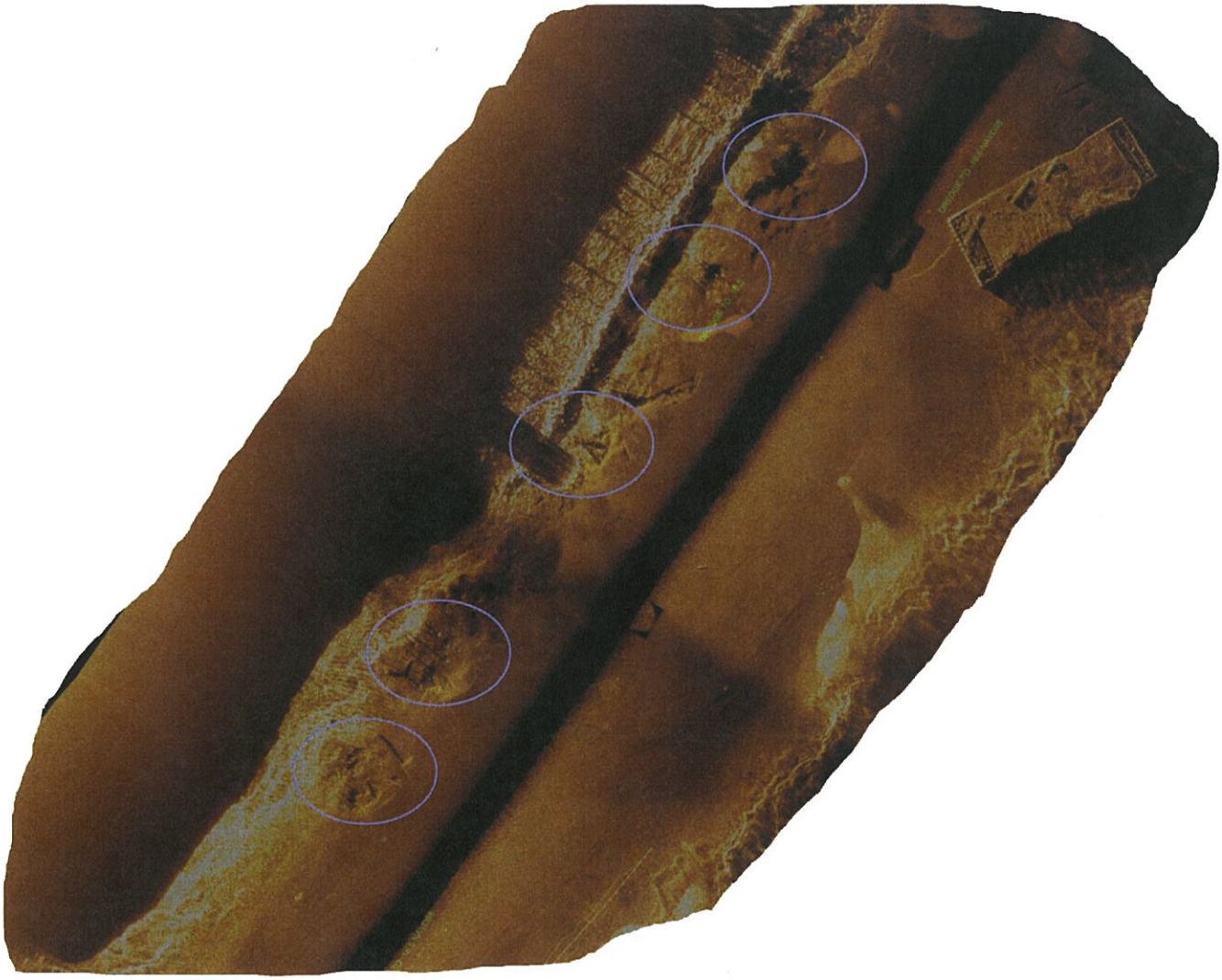
**Equipment**

An R2Sonic 2024 Mulit-Beam Sonar was used to collect the Before Dredge survey at 200 kHz.



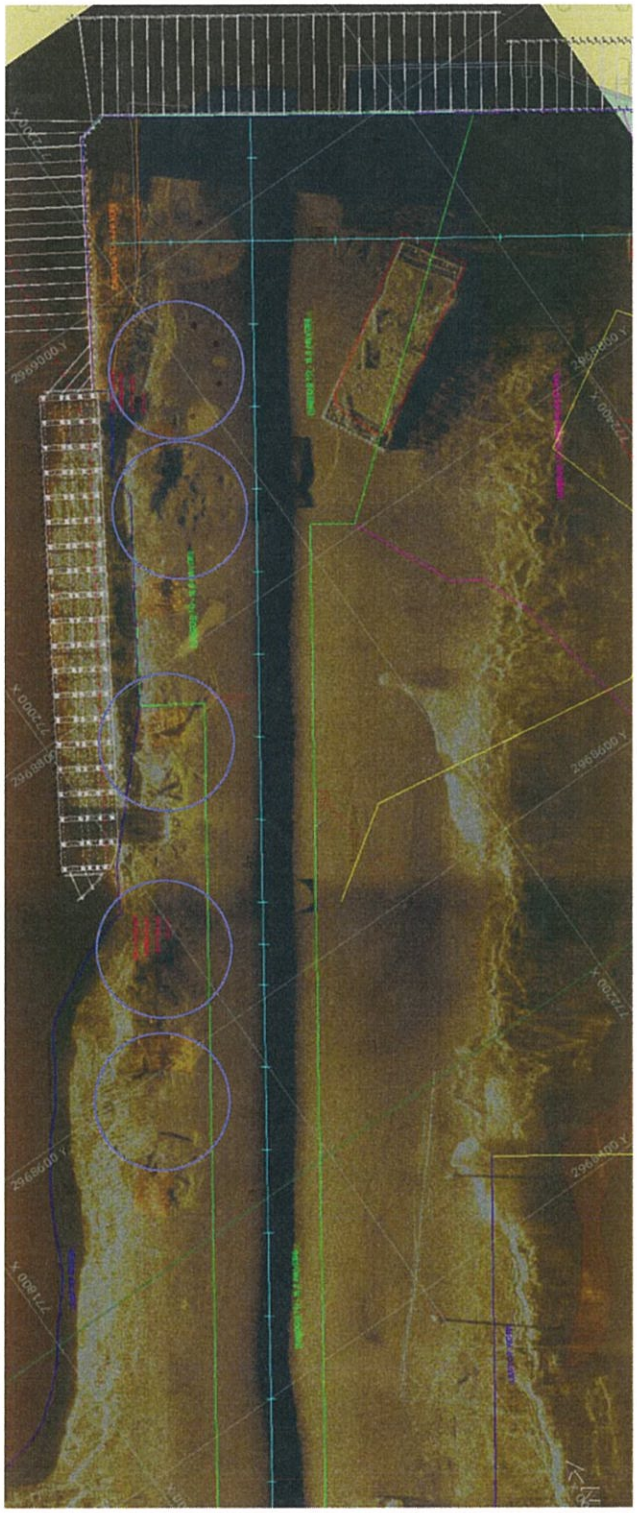
An Edgetech 4125 Side Scan Sonar was used to collect the side scan sonar survey at 900 kHz for the Debris survey.

Wynn Boston Harbor Sediment Remediation Debris Survey



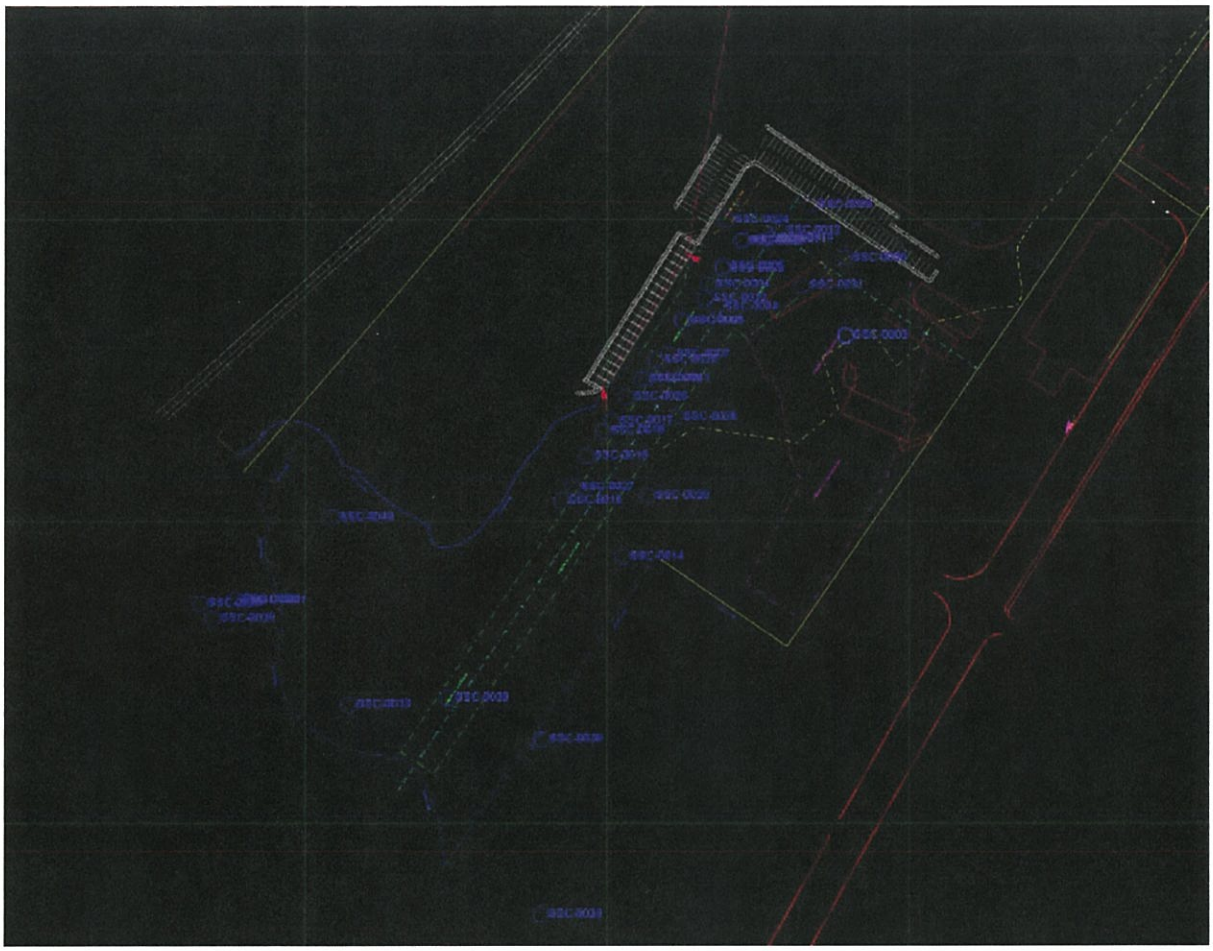
Overview Side Scan Data Imagery with razed foundations highlighted

Wynn Boston Harbor Sediment Remediation Debris Survey

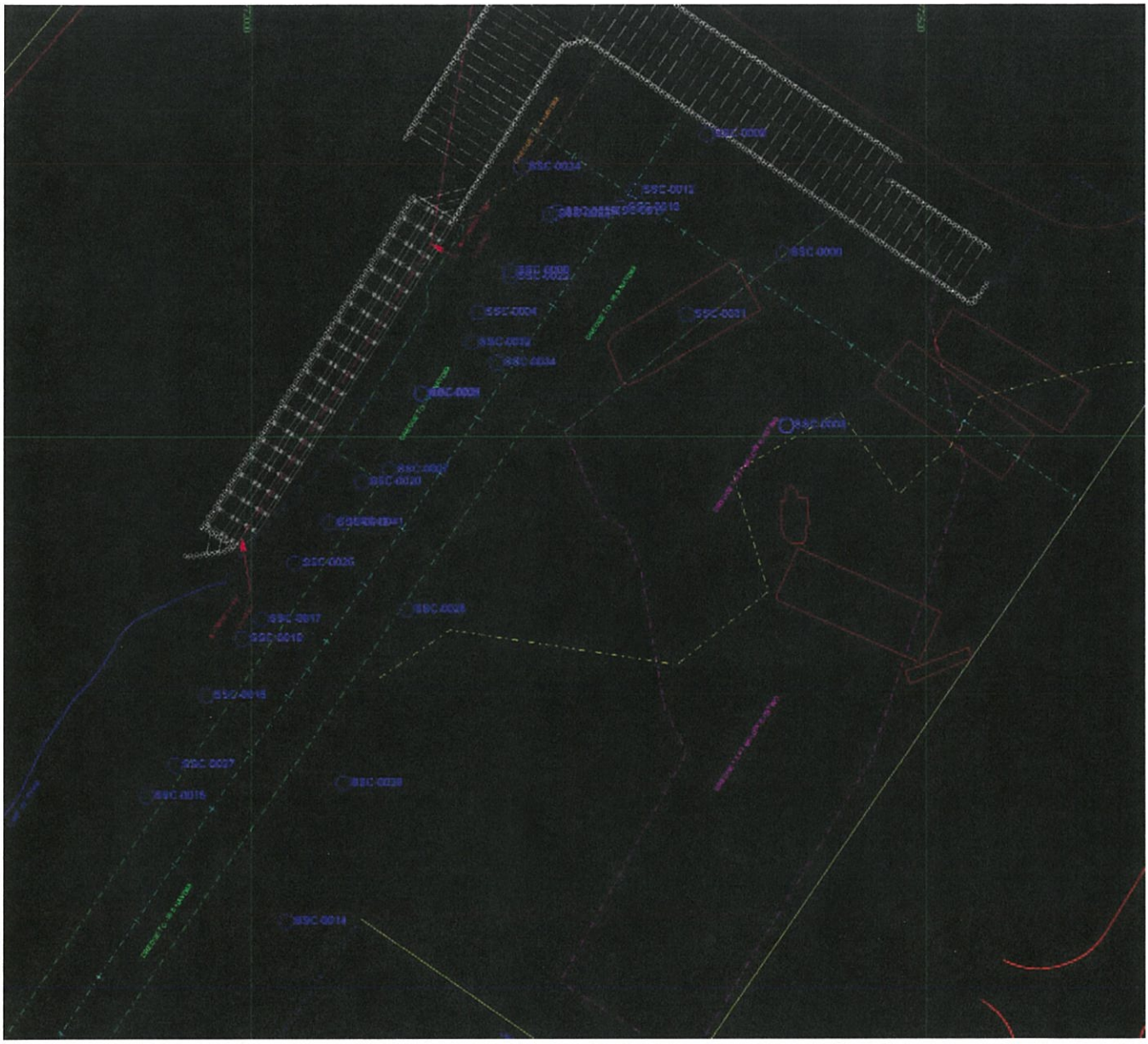


Transparent Side scan imagery, project background and NOAA Chart with razed foundations highlighted

Wynn Boston Harbor Sediment Remediation Debris Survey



General Alignment of Side Scan Targets



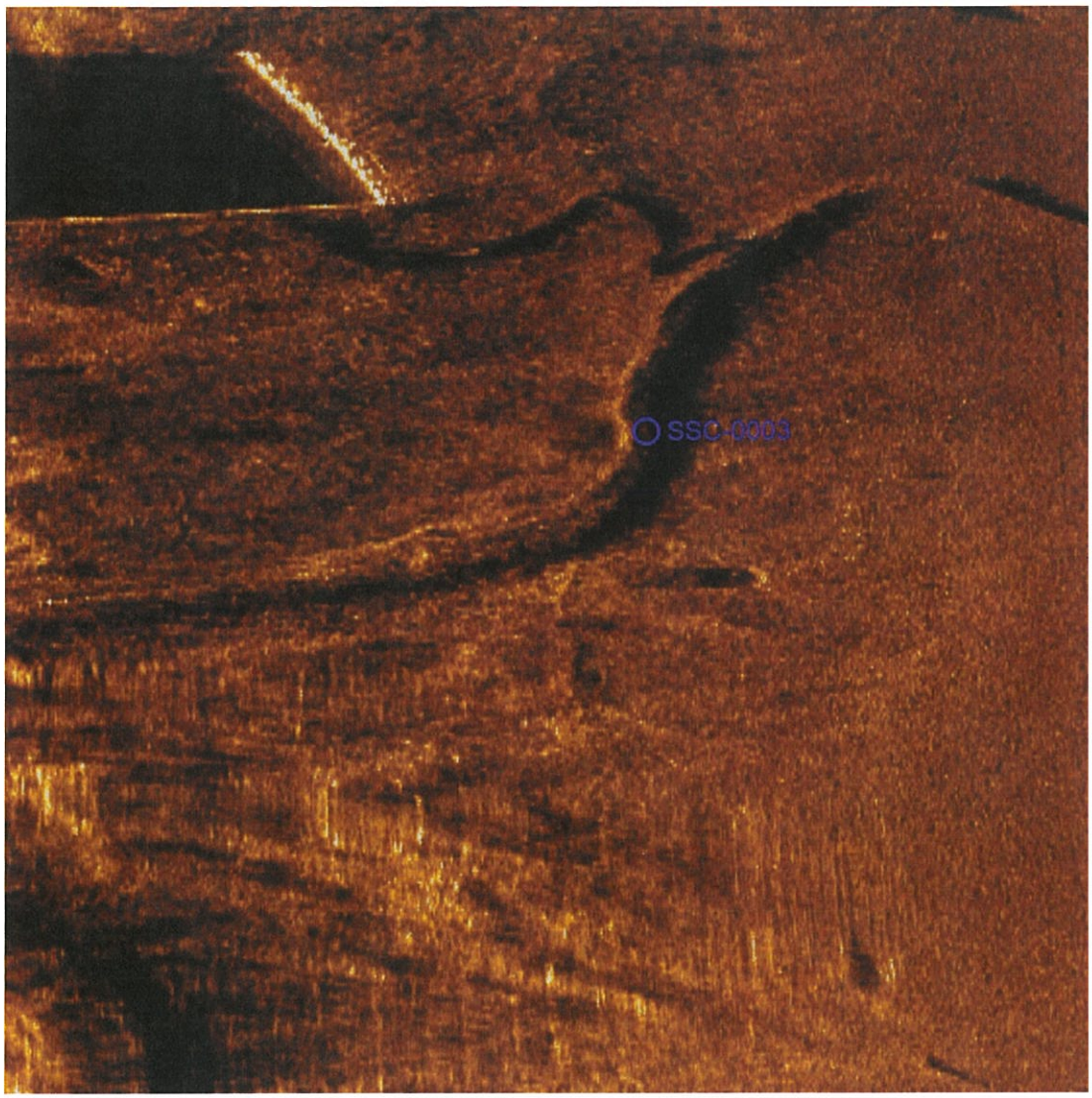
General Alignment of Side Scan Targets (zoom)

Wynn Boston Harbor Sediment Remediation Debris Survey

| Target | X | Y |
|---|---|---|
| SSC-0003 | 772396.38 | 2968807.48 |
| SSC-0004 | 772167.89 | 2968891.78 |
| SSC-0005 | 772125.41 | 2968831.59 |
| SSC-0006 | 772191.63 | 2968923.02 |
| SSC-0007 | 772102.29 | 2968775.53 |
| SSC-0008 | 772394.02 | 2968935.63 |
| SSC-0009 | 772337.35 | 2969023.58 |
| SSC-0010 | 772273.34 | 2968969.26 |
| SSC-0011 | 772262.47 | 2968966.29 |
| SSC-0012 | 772284.64 | 2968981.82 |
| SSC-0013 | 771571.28 | 2968195.74 |
| SSC-0014 | 772026.06 | 2968440.82 |
| SSC-0015 | 771922.66 | 2968533.40 |
| SSC-0016 | 771966.76 | 2968607.80 |
| SSC-0017 | 772007.57 | 2968664.33 |
| SSC-0018 | 771993.52 | 2968649.93 |
| SSC-0019 | 772057.53 | 2968735.85 |
| SSC-0020 | 772081.73 | 2968766.00 |
| SSC-0021 | 772126.28 | 2968831.79 |
| SSC-0022 | 772191.52 | 2968918.11 |
| SSC-0023 | 772221.31 | 2968964.33 |
| SSC-0024 | 772199.51 | 2968999.29 |
| SSC-0025 | 772114.71 | 2968671.78 |
| SSC-0026 | 772031.45 | 2968705.78 |
| SSC-0027 | 771943.53 | 2968556.49 |
| SSC-0028 | 772067.57 | 2968542.33 |
| SSC-0029 | 772226.36 | 2968966.08 |
| SSC-0030 | 771891.14 | 2968138.61 |
| SSC-0031 | 772322.91 | 2968890.33 |
| SSC-0032 | 772163.14 | 2968869.23 |
| SSC-0033 | 771889.29 | 2967848.86 |
| SSC-0034 | 772181.79 | 2968854.48 |
| SSC-0035 | 771347.35 | 2968339.38 |
| SSC-0036 | 771326.46 | 2968364.62 |
| SSC-0037 | 771400.88 | 2968368.77 |
| SSC-0038 | 771383.24 | 2968370.22 |
| SSC-0039 | 771734.21 | 2968206.52 |
| SSC-0040 | 771544.17 | 2968505.90 |
| SSC-0041 | 772068.75 | 2968736.08 |

Wynn Boston Harbor Sediment Remediation Debris Survey

| Target | X | Y |
|---|---|---|
| M-42 | 772306.51 | 2968874.43 |
| M-43 | 772195.67 | 2968683.11 |
| M-44 | 772095.20 | 2968779.56 |
| M-45 | 772067.99 | 2968735.97 |
| M-46 | 771977.36 | 2968607.21 |
| M-47 | 771953.31 | 2968564.72 |
| M-48 | 771884.94 | 2968475.90 |
| M-49 | 771858.16 | 2968469.50 |
| M-50 | 771737.06 | 2968227.88 |
| M-51 | 771652.07 | 2968133.62 |
| M-52 | 771604.44 | 2968050.69 |
| M-53 | 771708.17 | 2968025.99 |
| M-54 | 771740.45 | 2968078.85 |
| M-55 | 771825.63 | 2968172.04 |
| M-56 | 771607.75 | 2968307.84 |
| M-57 | 771561.04 | 2968320.18 |
| M-58 | 771526.00 | 2968261.19 |
| M-59 | 771520.65 | 2968343.76 |
| M-60 | 772121.77 | 2968606.16 |

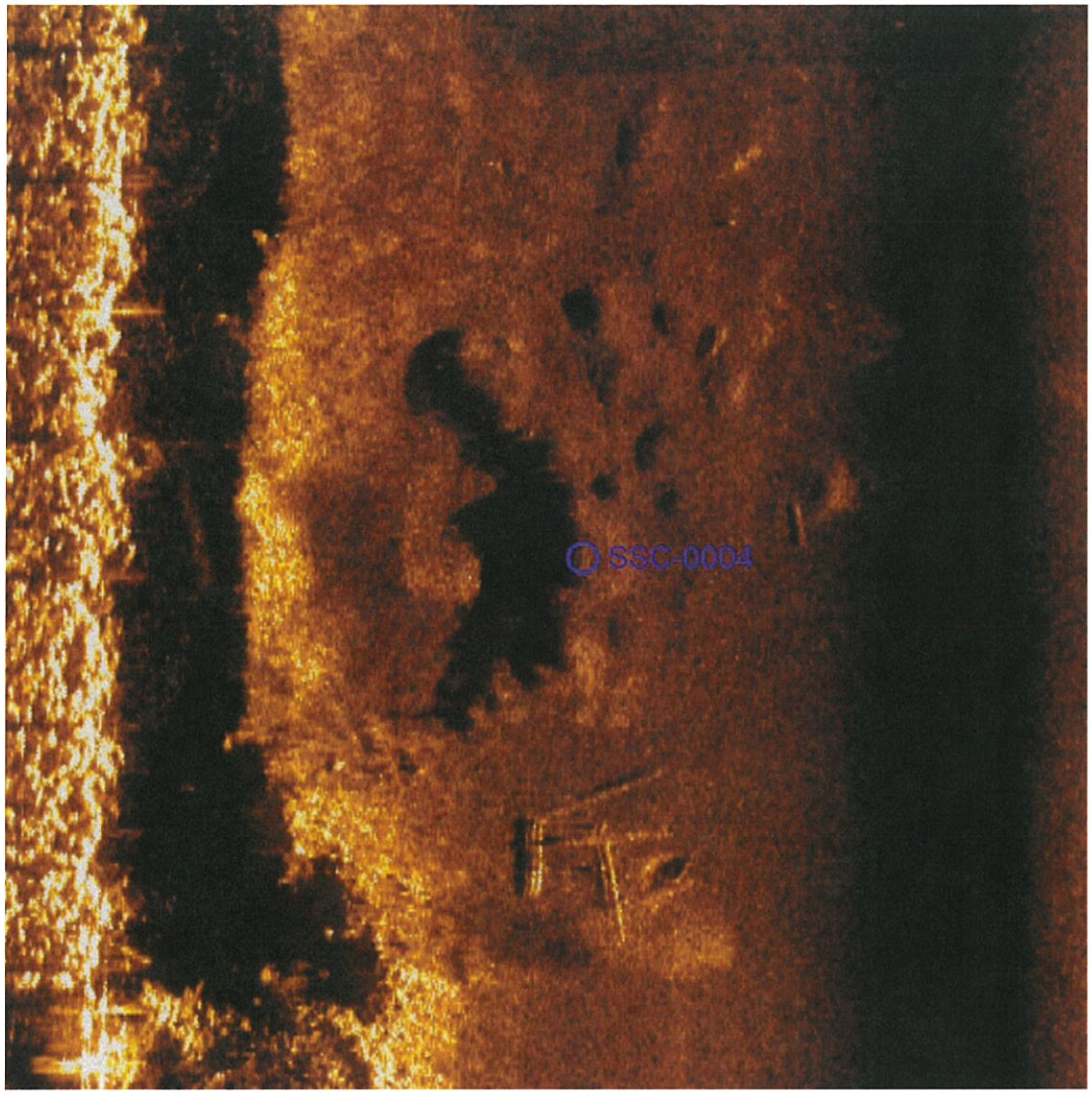



**SSC-0003**

- Sonar Time at Target: 9/29/2017 8:28:53 PM
- Click Position
  42.3937549120 -71.0697238083 (WGS84)
  42.3936580536 -71.0702277448 (NAD27LL)
  42.3937549120 -71.0697238083 (LocalLL)
  (X) 772396.38 (Y) 2968807.48 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929202828.jsf
- Ping Number: 43598
- Range to target: 59.58 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.45 US ft
- Target Length: 37.45 US ft
- Target Shadow: 7.47 US ft
- Classification1: feature
- Description: Inter-tidal channel

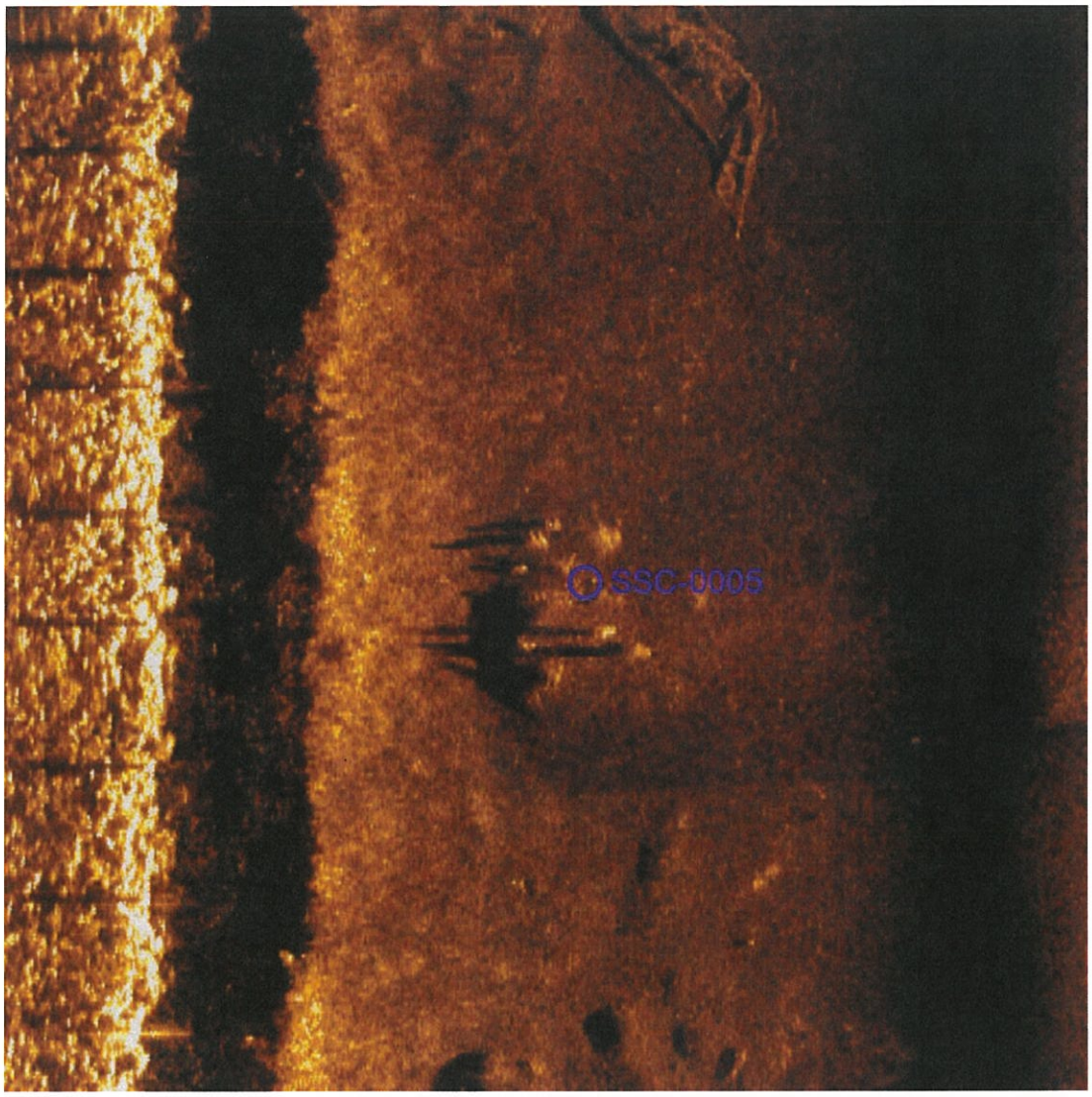



**SSC-0004**

- Sonar Time at Target: 9/29/2017 8:13:44 PM
- Click Position
  42.3939893910 -71.0705681026 (WGS84)
  42.3938925406 -71.0710720155 (NAD27LL)
  42.3939893910 -71.0705681026 (LocalLL)
  (X) 772167.89 (Y) 2968891.78 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34852
- Range to target: 39.61 US ft

**Dimensions and attributes**

- Target Width: 6.58 US ft
- Target Height: 3.23 US ft
- Target Length: 37.08 US ft
- Target Shadow: 13.16 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

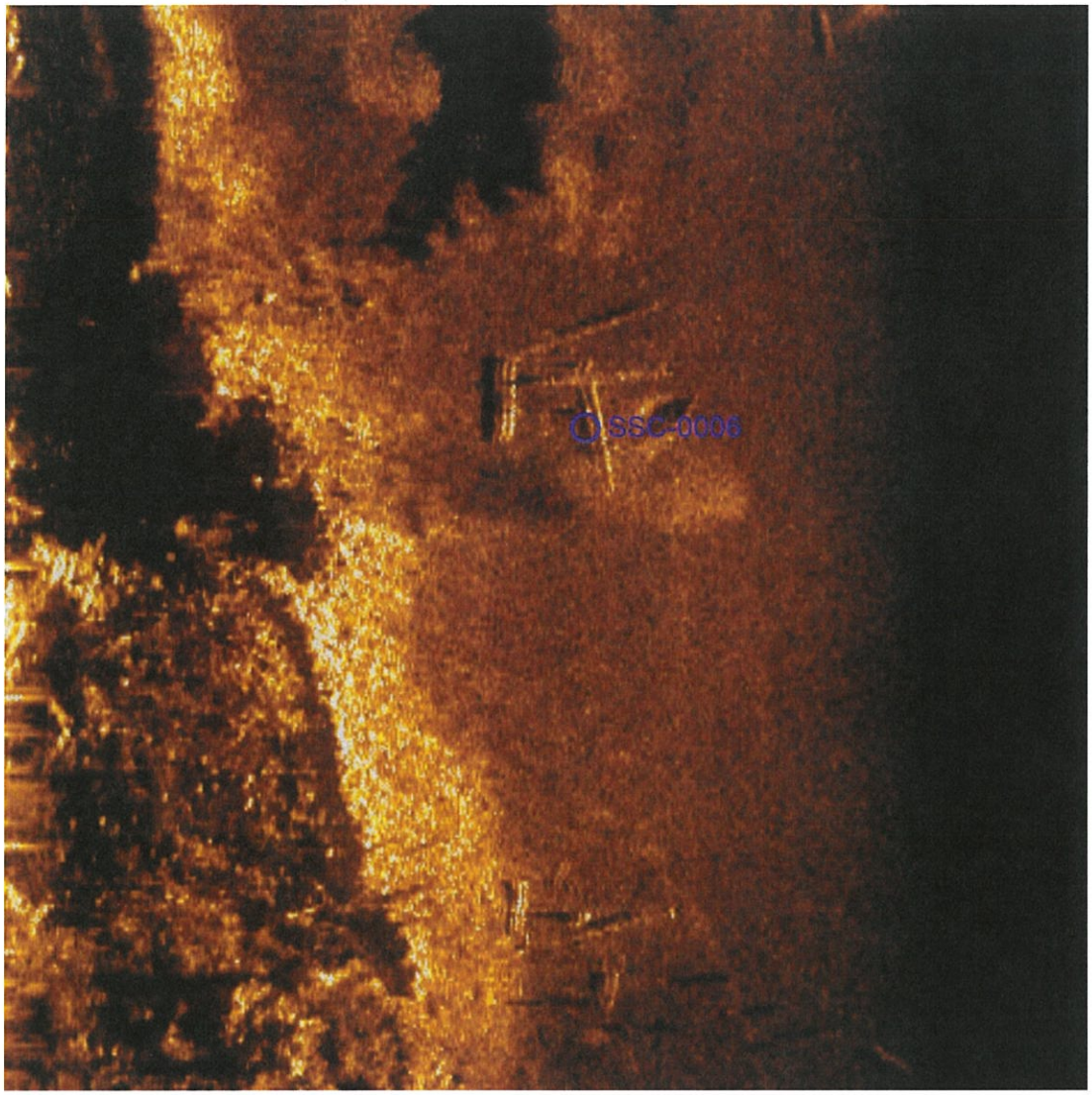



**SSC-0005**

- Sonar Time at Target: 9/29/2017 8:13:27 PM
- Click Position
  42.3938247932 -71.0707264676 (WGS84)
  42.3937279410 -71.0712303782 (NAD27LL)
  42.3938247932 -71.0707264676 (LocalLL)
  (X) 772125.41 (Y) 2968831.59 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34689
- Range to target: 41.83 US ft

**Dimensions and attributes**

- Target Width: 11.33 US ft
- Target Height: 1.39 US ft
- Target Length: 18.87 US ft
- Target Shadow: 5.19 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin

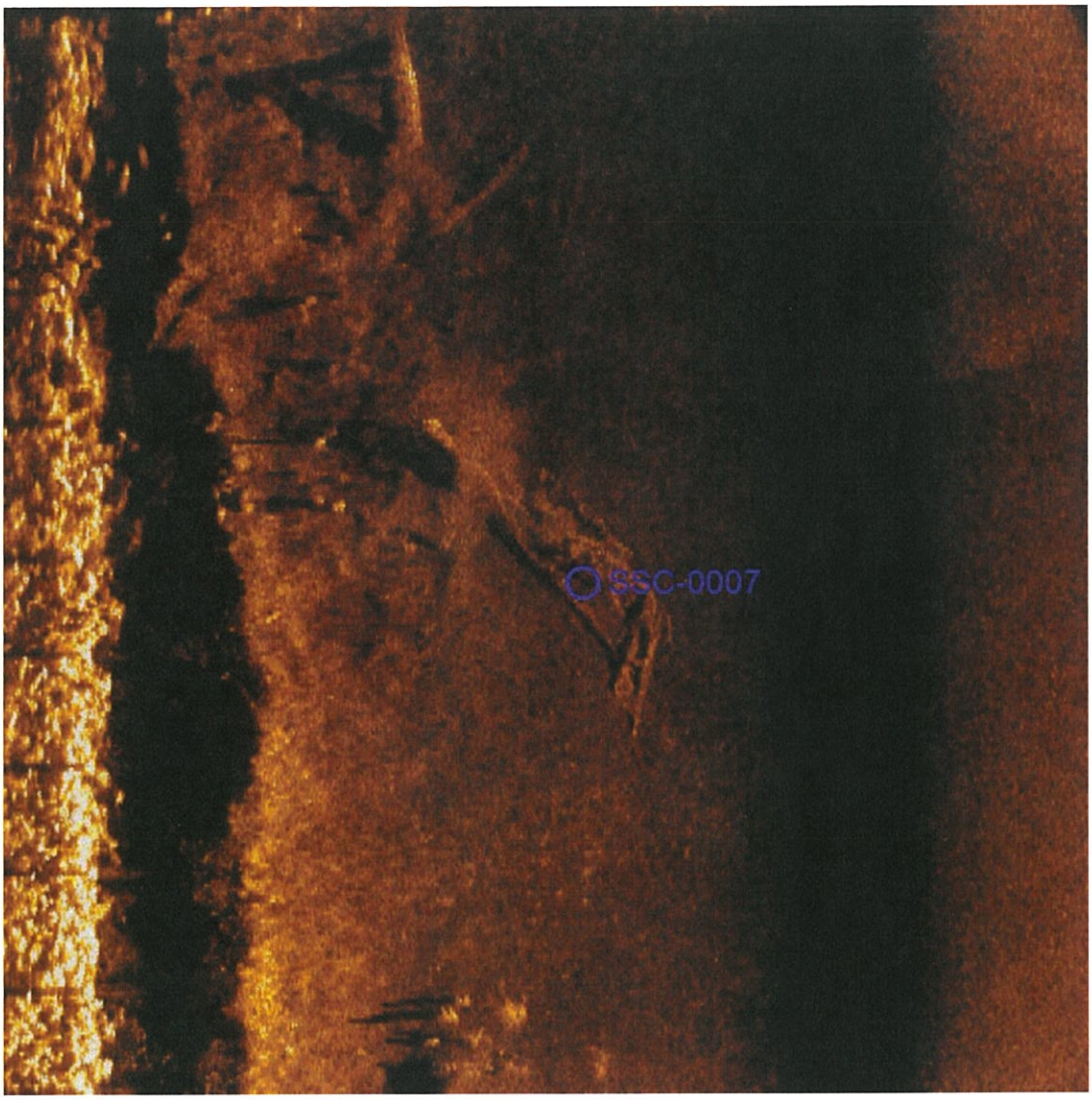



**SSC-0006**

- Sonar Time at Target: 9/29/2017 8:13:52 PM
- Click Position
  42.3940747730 -71.0704796475 (WGS84)
  42.3939779234 -71.0709835618 (NAD27LL)
  42.3940747730 -71.0704796475 (LocalLL)
  (X) 772191.63 (Y) 2968923.02 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34929
- Range to target: 37.78 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 10.99 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin

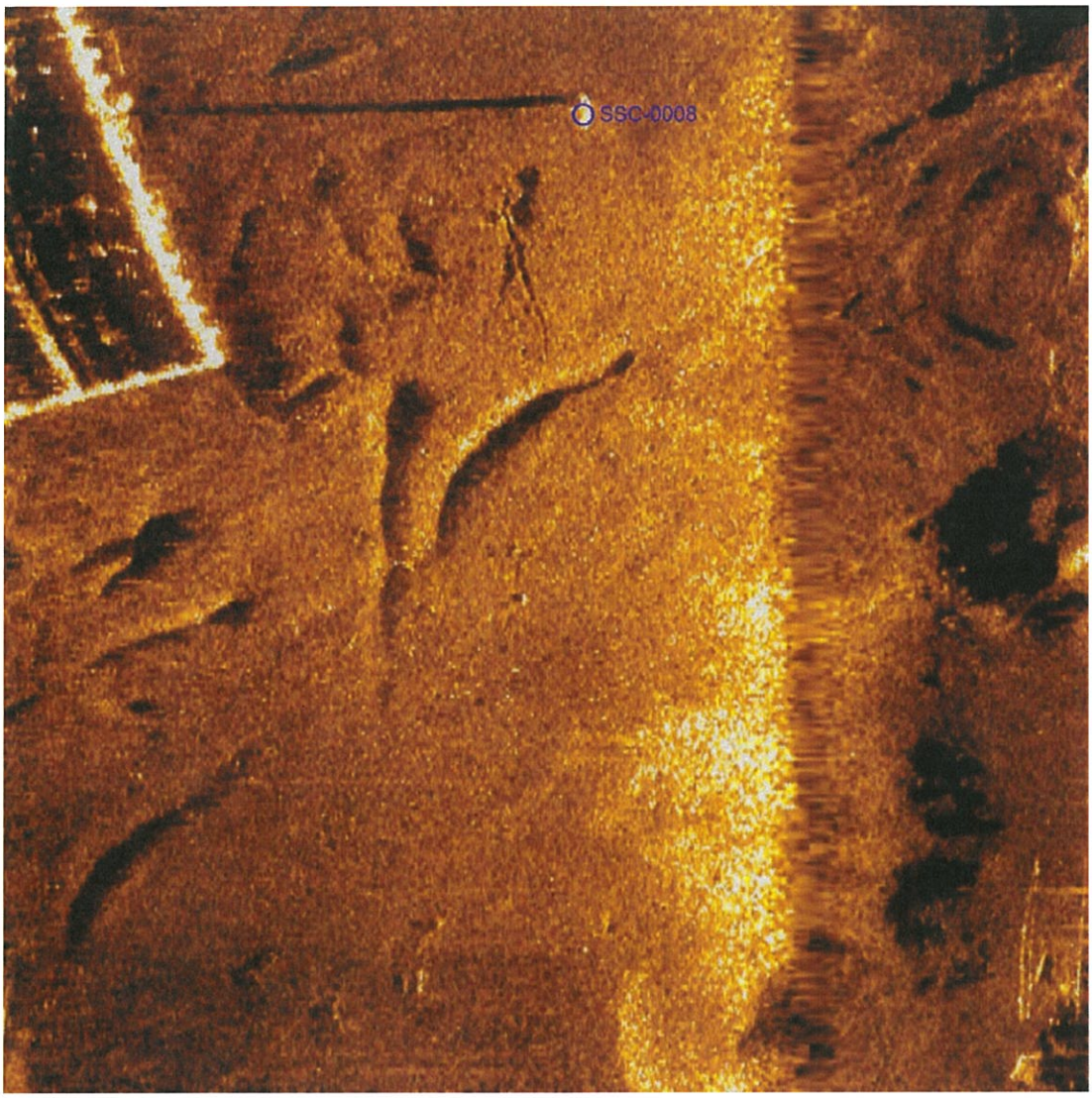



**SSC-0007**

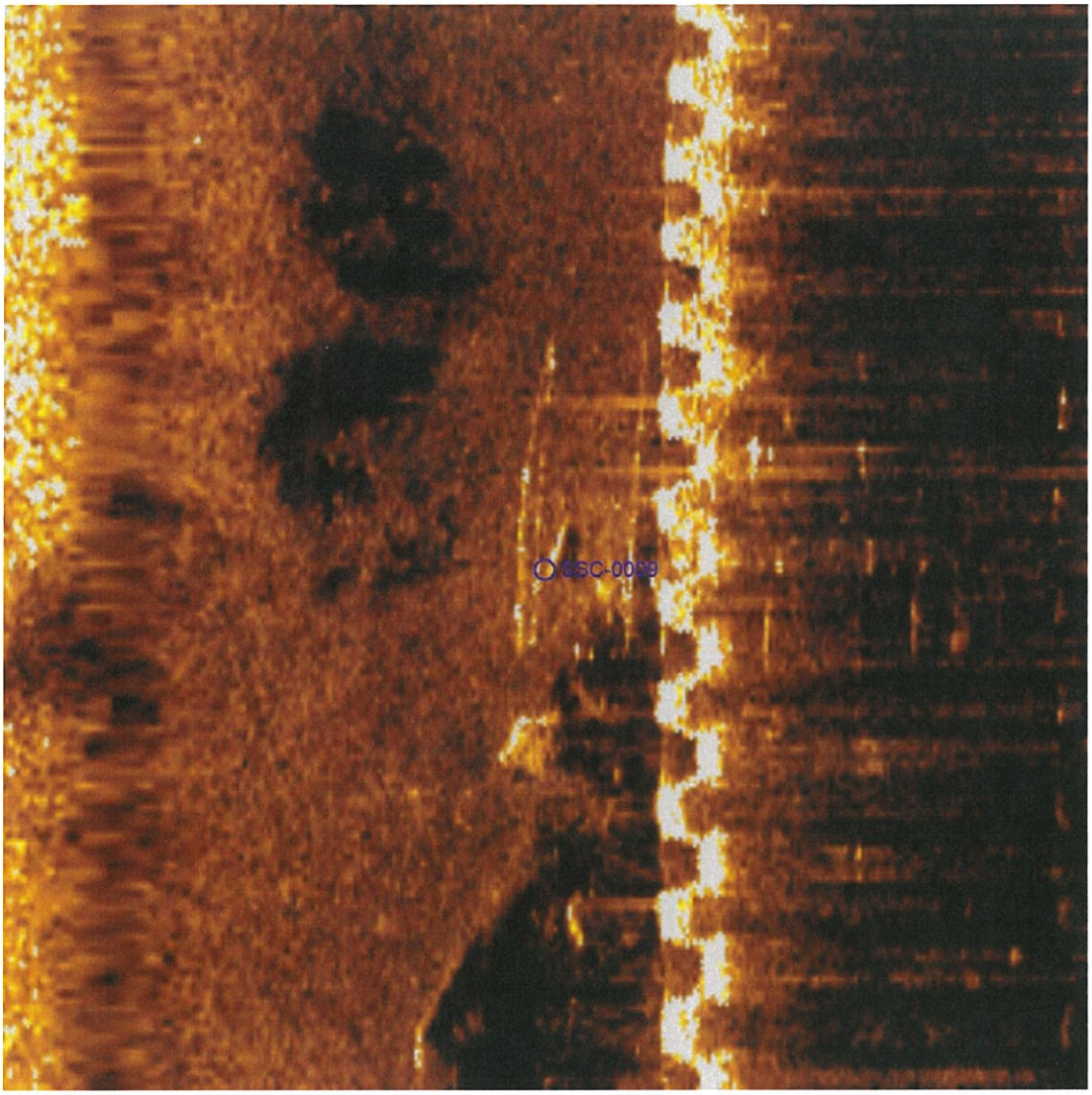
- Sonar Time at Target: 9/29/2017 8:13:14 PM
- Click Position
  42.3936712870 -71.0708131189 (WGS84)
  42.3935744329 -71.0713170288 (NAD27LL)
  42.3936712870 -71.0708131189 (LocalLL)
  (X) 772102.29 (Y) 2968775.53 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 34571
- Range to target: 31.11 US ft

**Dimensions and attributes**

- Target Width: 6.34 US ft
- Target Height: 0.00 US ft
- Target Length: 29.71 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin




| SSC-0008 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:41:38 PM<br>• Click Position<br>42.3941065754 -71.0697301634 (WGS84)<br>42.3940097226 -71.0702340963 (NAD27LL)<br>42.3941065754 -71.0697301634 (LocalLL)<br>(X) 772394.02 (Y) 2968935.63 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf<br>• Ping Number: 50955<br>• Range to target: 18.17 US ft | • Target Width: 0.00 US ft<br>• Target Height: 4.01 US ft<br>• Target Length: 0.00 US ft<br>• Target Shadow: 30.56 US ft<br>• Classification1: piling<br>• Description: |



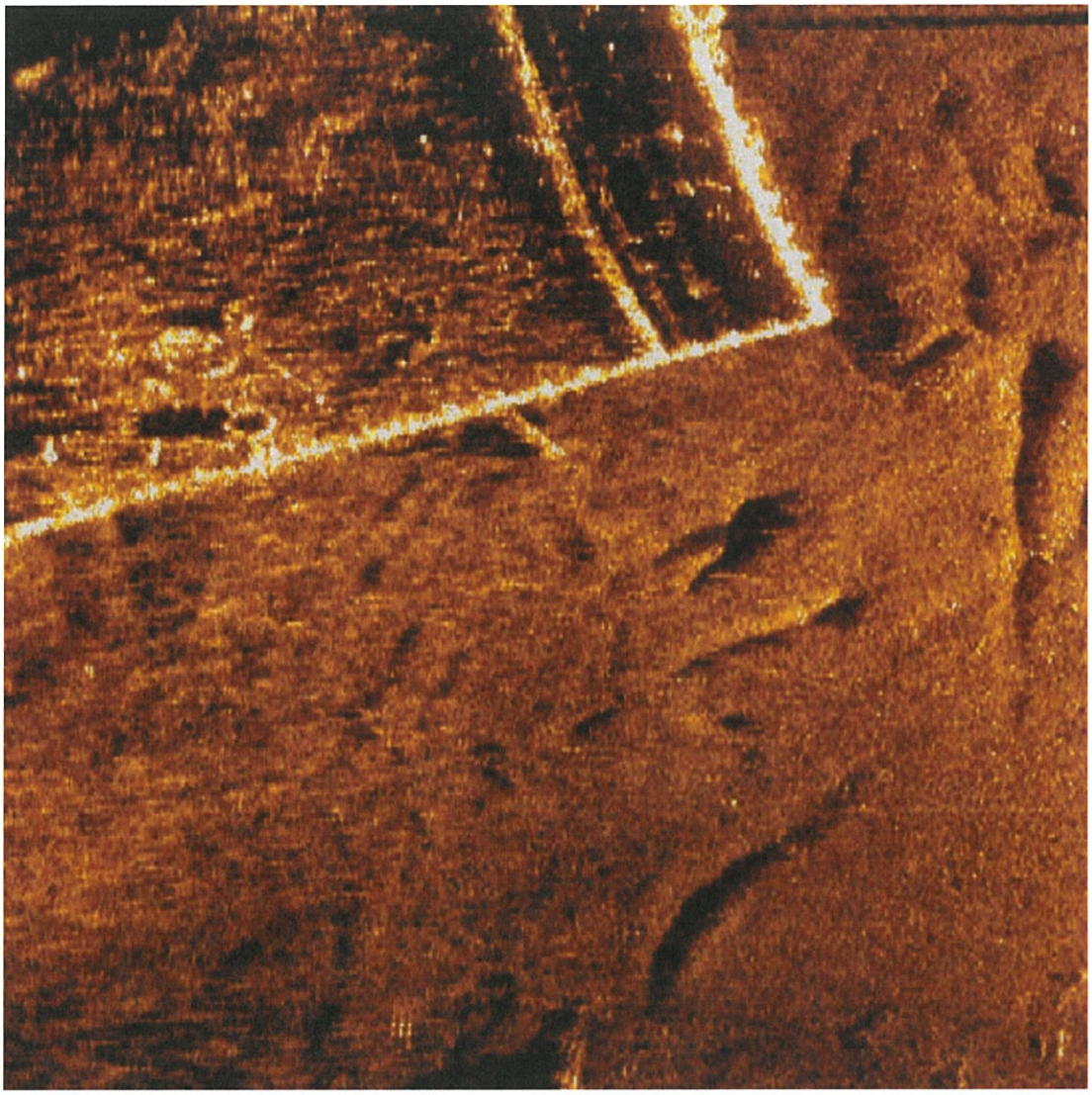

**SSC-0009**

- Sonar Time at Target: 9/29/2017 8:42:02 PM
- Click Position
  42.3943486989 -71.0699383216 (WGS84)
  42.3942518508 -71.0704422468 (NAD27LL)
  42.3943486989 -71.0699383216 (LocalLL)
  (X) 772337.35 (Y) 2969023.58 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf
- Ping Number: 51186
- Range to target: 18.04 US ft

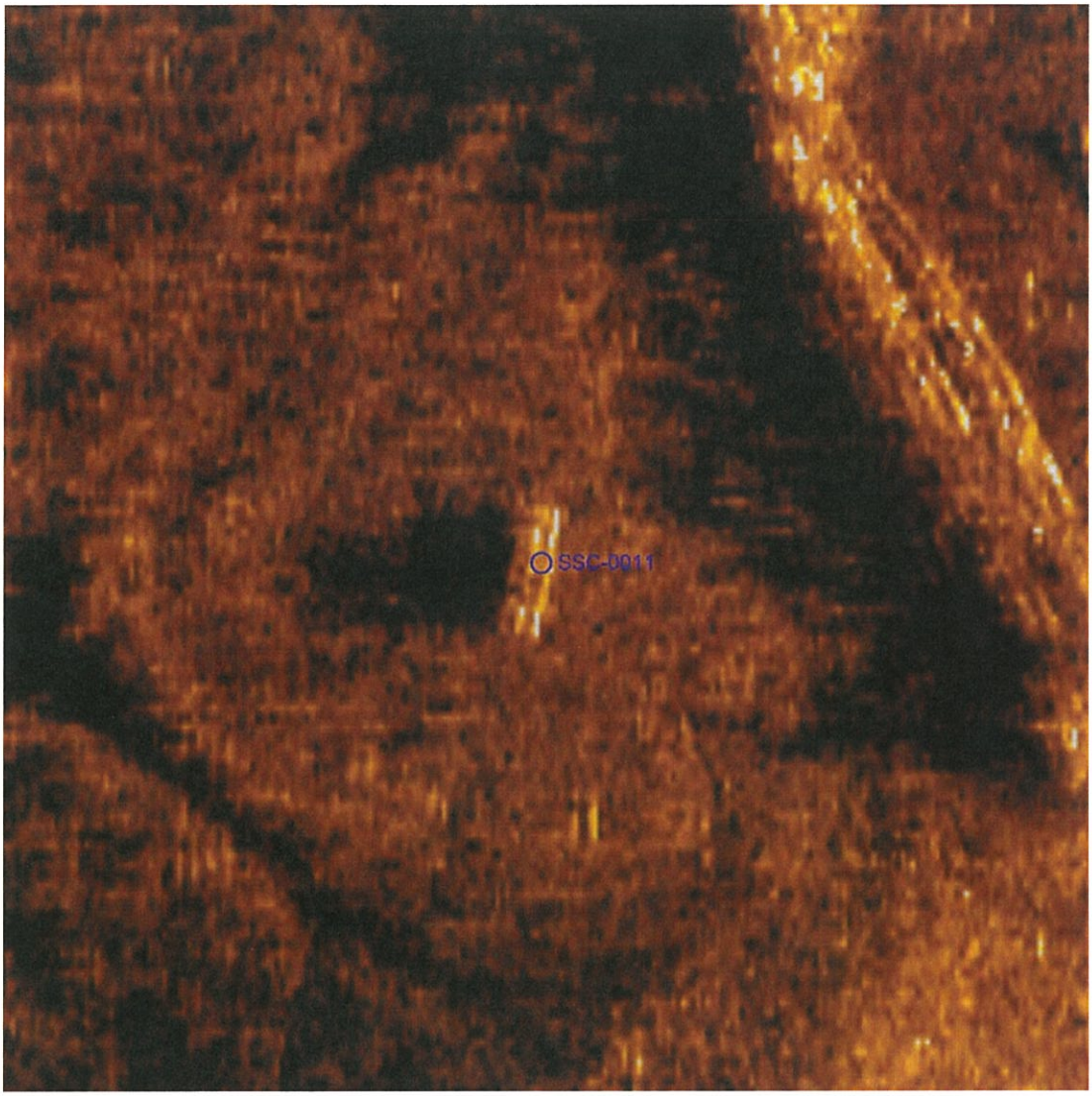
**Dimensions and attributes**

- Target Width: 4.50 US ft
- Target Height: 0.00 US ft
- Target Length: 10.95 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Construction debris from sheet pile installation

Wynn Boston Harbor Sediment Remediation Debris Survey



| SSC-0010 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:42:08 PM<br>• Click Position<br>42.3942005319 -71.0701762768 (WGS84)<br>42.3941036828 -71.0706801975 (NAD27LL)<br>42.3942005319 -71.0701762768 (LocalLL)<br>(X) 772273.34 (Y) 2968969.26 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf<br>• Ping Number: 51244<br>• Range to target: 64.18 US ft | • Target Width: 3.70 US ft<br>• Target Height: 0.51 US ft<br>• Target Length: 34.70 US ft<br>• Target Shadow: 5.39 US ft<br>• Classification1: debris<br>• Description: Possible wire/piling |



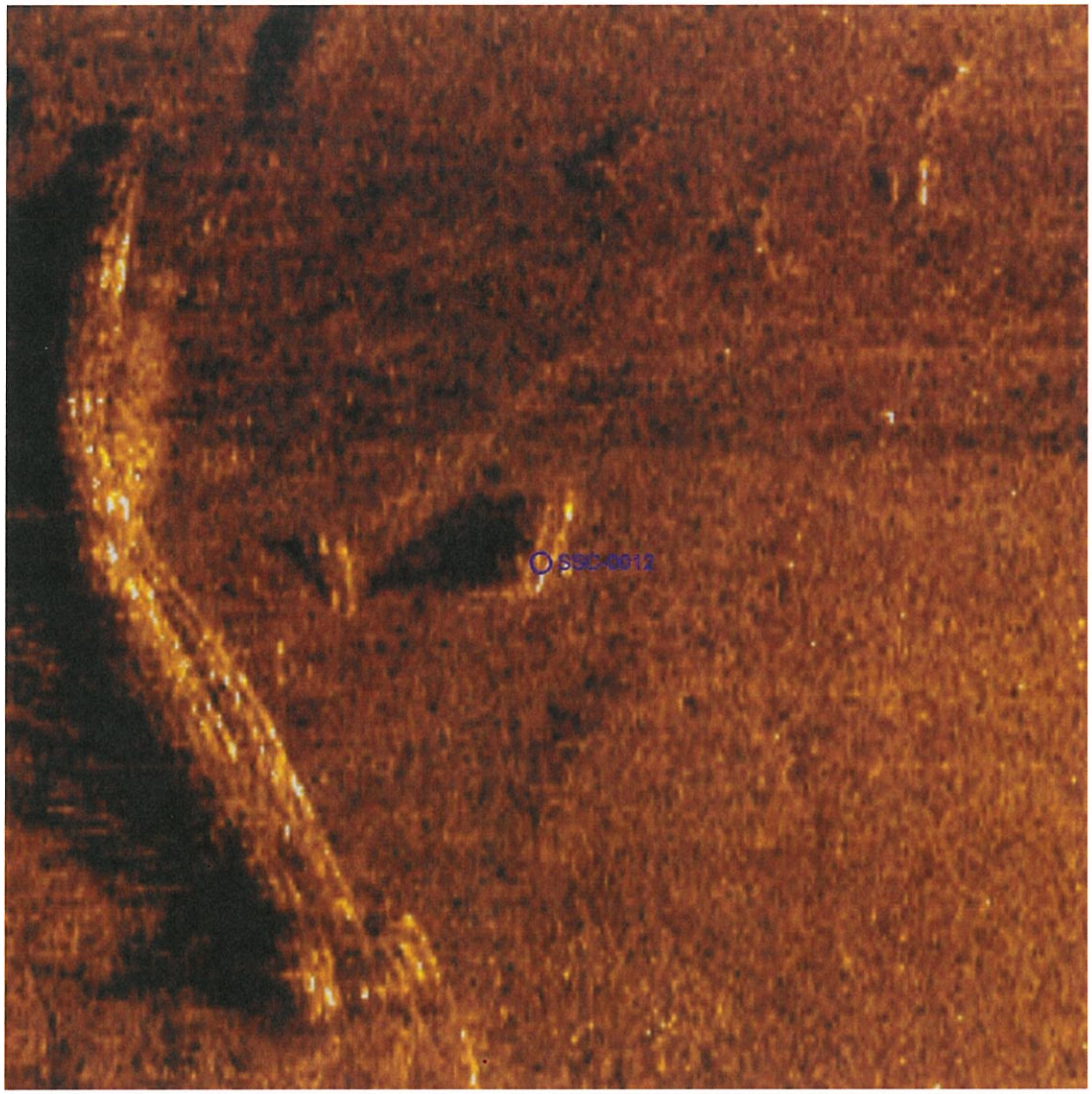

**SSC-0011**

- Sonar Time at Target: 9/29/2017 8:42:12 PM
- Click Position
  42.3941925239 -71.0702165972 (WGS84)
  42.3940956748 -71.0707205170 (NAD27LL)
  42.3941925239 -71.0702165972 (LocalLL)
  (X) 772262.47 (Y) 2968966.29 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf
- Ping Number: 51281
- Range to target: 73.20 US ft

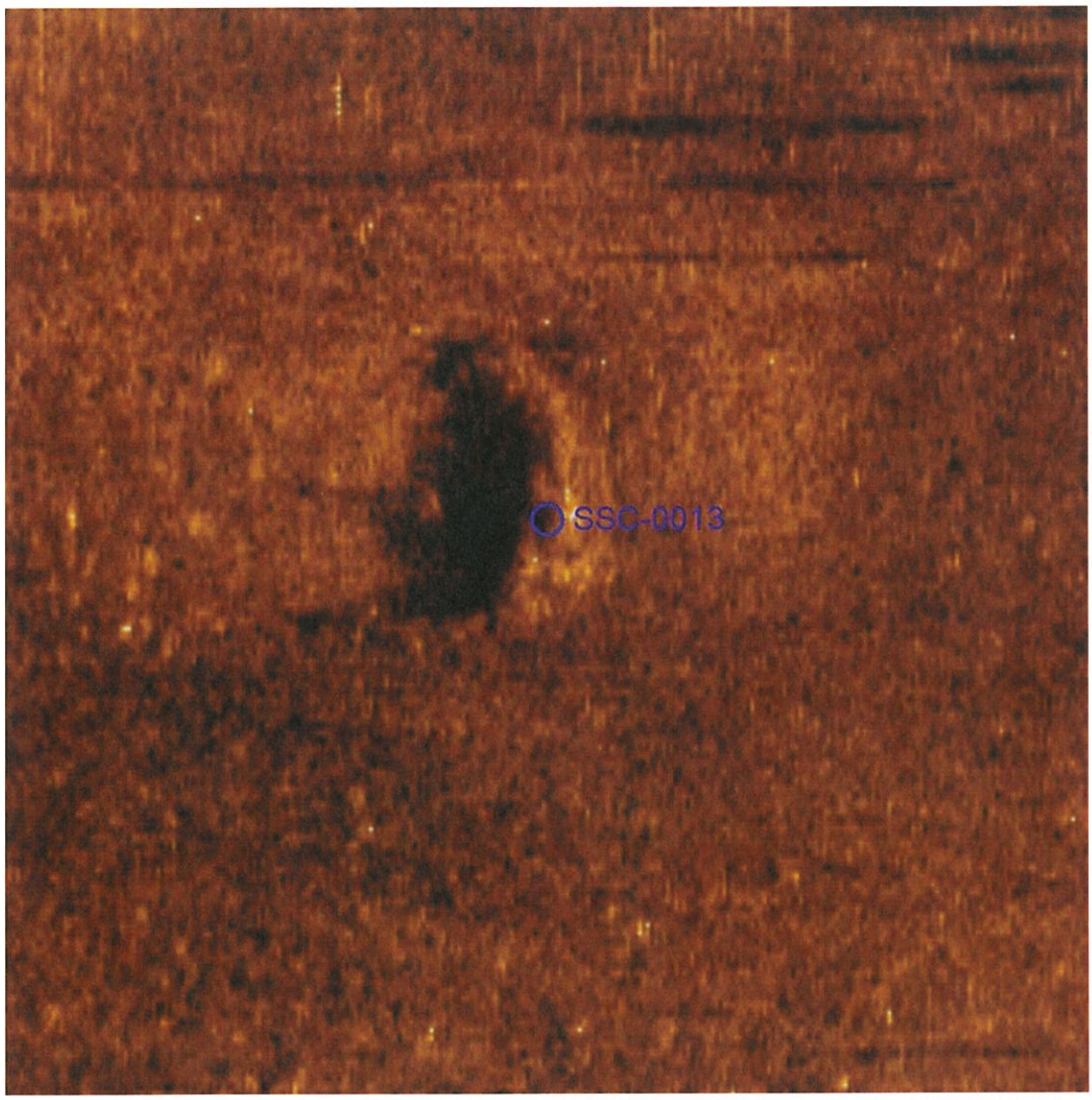
**Dimensions and attributes**

- Target Width: 1.24 US ft
- Target Height: 0.46 US ft
- Target Length: 3.94 US ft
- Target Shadow: 5.54 US ft
- Classification1: debris
- Description:

Wynn Boston Harbor Sediment Remediation Debris Survey




| SSC-0012 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:42:07 PM<br>• Click Position<br>42.3942348362 -71.0701342280 (WGS84)<br>42.3941379874 -71.0706381494 (NAD27LL)<br>42.3942348362 -71.0701342280 (LocalLL)<br>(X) 772284.64 (Y) 2968981.82 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204112.jsf<br>• Ping Number: 51240<br>• Range to target: 47.32 US ft | • Target Width: 2.76 US ft<br>• Target Height: 0.78 US ft<br>• Target Length: 5.38 US ft<br>• Target Shadow: 6.44 US ft<br>• Classification1: debris<br>• Description: |



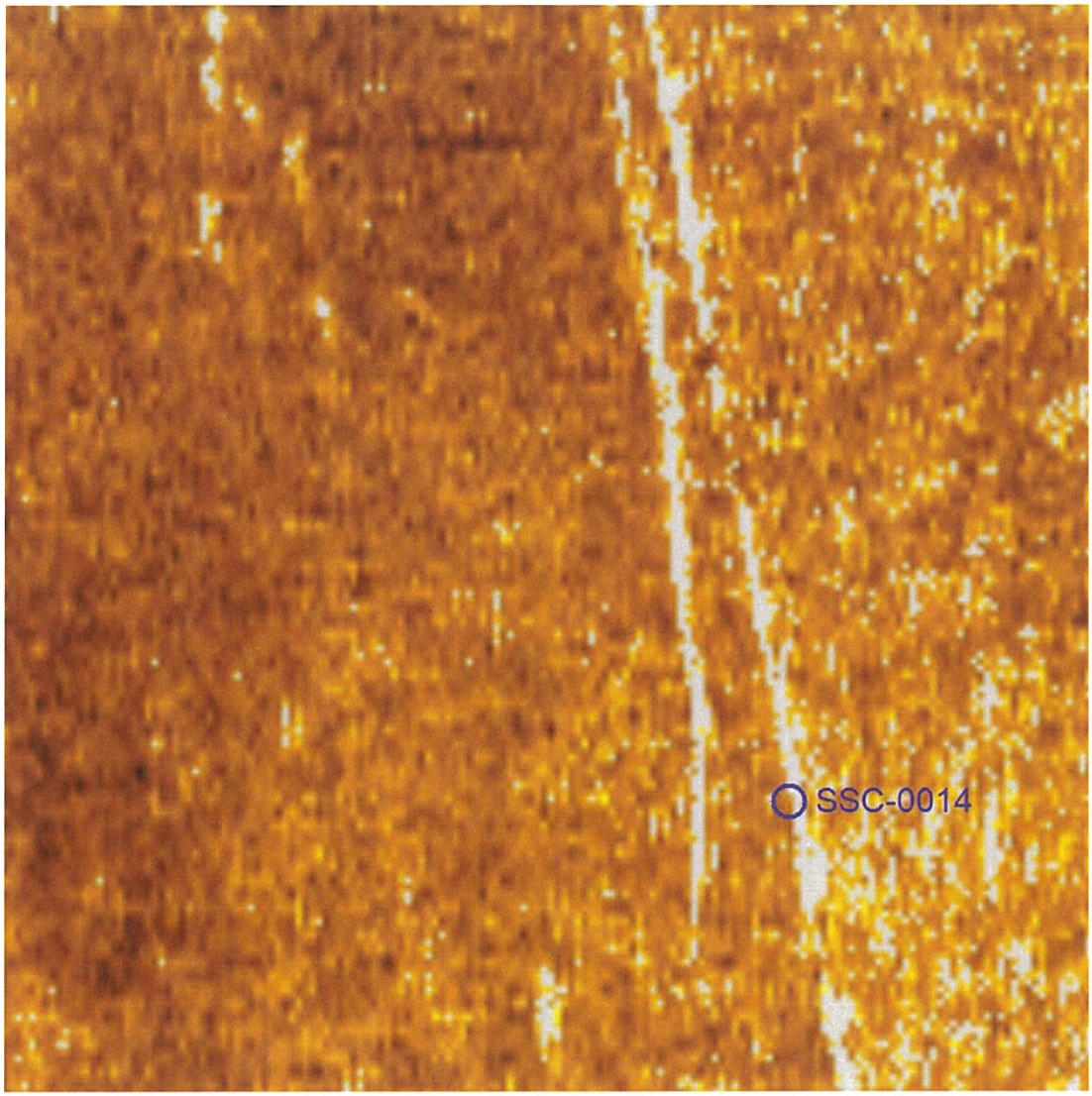

**SSC-0013**

- Sonar Time at Target: 9/29/2017 7:59:33 PM
- Click Position
  42.3920876614 -71.0727895806 (WGS84)
  42.3919907928 -71.0732934563 (NAD27LL)
  42.3920876614 -71.0727895806 (LocalLL)
  (X) 771571.28 (Y) 2968195.74 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 26668
- Range to target: 125.22 US ft

**Dimensions and attributes**

- Target Width: 4.43 US ft
- Target Height: 0.82 US ft
- Target Length: 16.04 US ft
- Target Shadow: 8.17 US ft
- Classification1: debris
- Description:

Wynn Boston Harbor Sediment Remediation Debris Survey

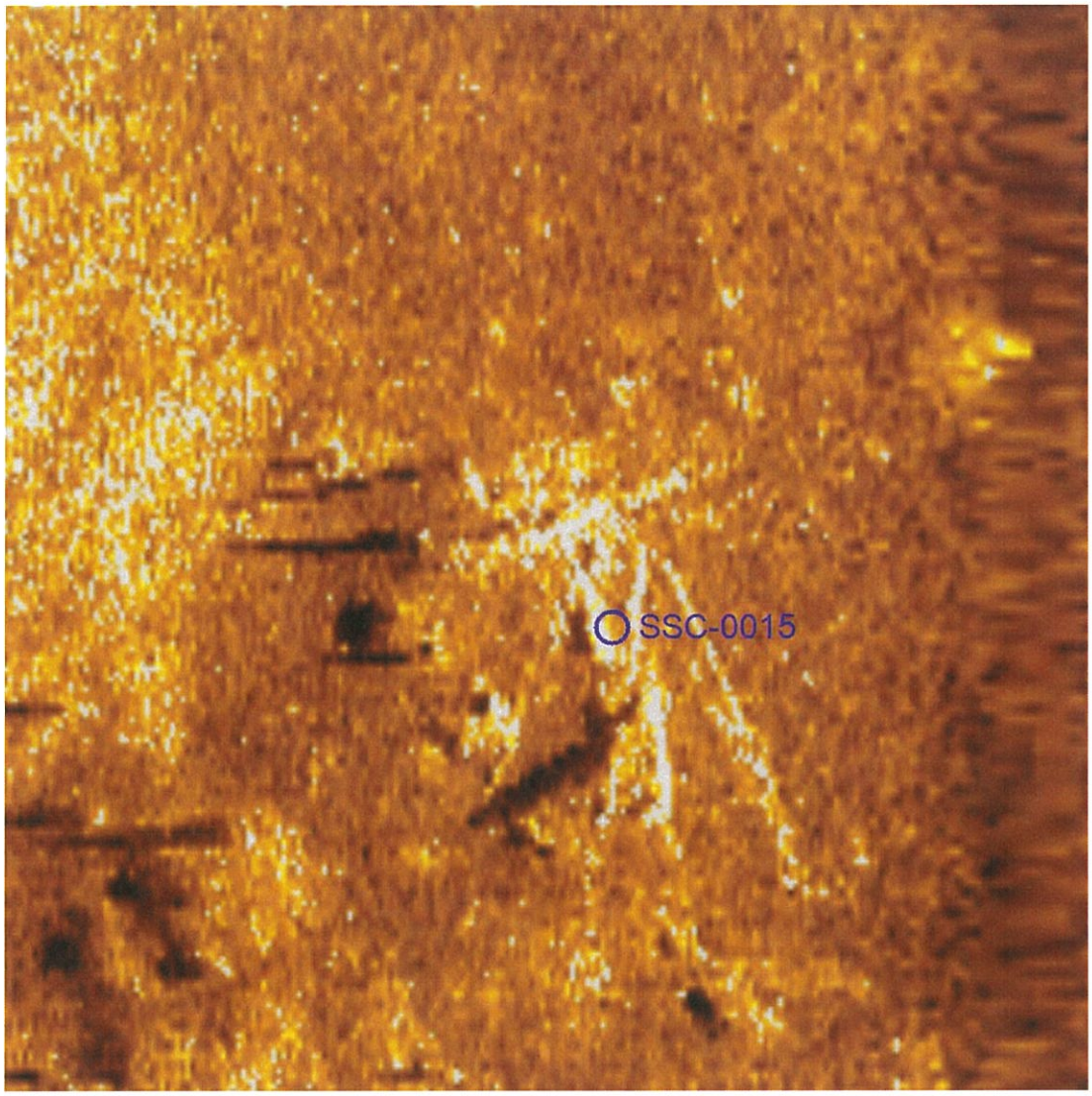



**SSC-0014**

- Sonar Time at Target: 9/29/2017 8:01:09 PM
- Click Position
  42.3927538946 -71.0711015312 (WGS84)
  42.3926570278 -71.0716054429 (NAD27LL)
  42.3927538946 -71.0711015312 (LocalLL)
  (X) 772026.06 (Y) 2968440.82 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27595
- Range to target: 116.07 US ft

**Dimensions and attributes**

- Target Width: 1.23 US ft
- Target Height: 0.28 US ft
- Target Length: 210.89 US ft
- Target Shadow: 2.18 US ft
- Classification1: cable
- Description:

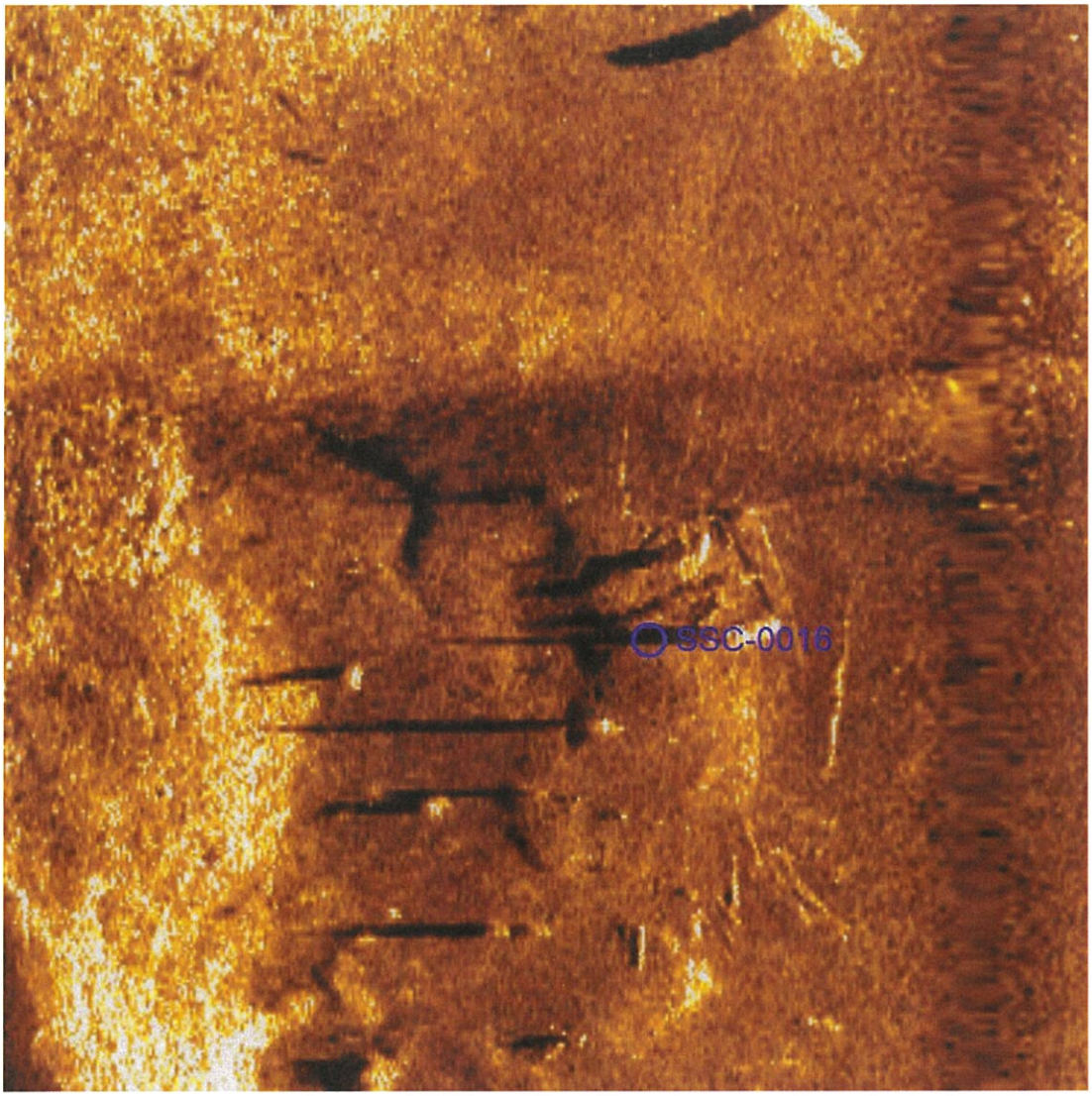



**SSC-0015**

- Sonar Time at Target: 9/29/2017 8:01:16 PM
- Click Position
  42.3930093763 -71.0714825679 (WGS84)
  42.3929125154 -71.0719864675 (NAD27LL)
  42.3930093763 -71.0714825679 (LocalLL)
  (X) 771922.66 (Y) 2968533.40 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27659
- Range to target: 20.00 US ft

**Dimensions and attributes**

- Target Width: 16.26 US ft
- Target Height: 4.03 US ft
- Target Length: 20.75 US ft
- Target Shadow: 8.46 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

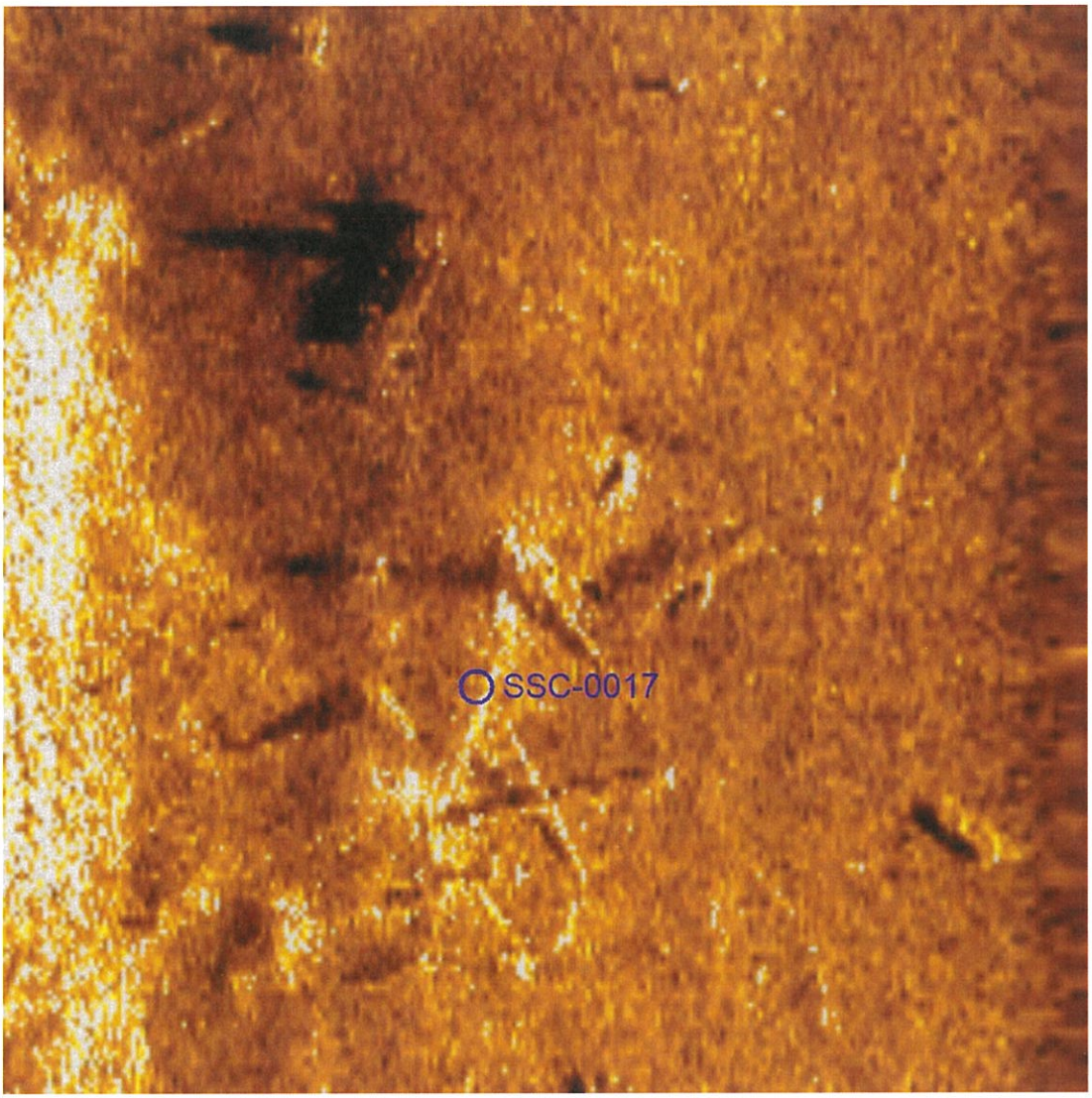



**SSC-0016**

- Sonar Time at Target: 9/29/2017 8:01:33 PM
- Click Position
  42.3932129229 -71.0713179358 (WGS84)
  42.3931160643 -71.0718218375 (NAD27LL)
  42.3932129229 -71.0713179358 (LocalLL)
  (X) 771966.76 (Y) 2968607.80 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27828
- Range to target: 27.19 US ft

**Dimensions and attributes**

- Target Width: 25.14 US ft
- Target Height: 6.86 US ft
- Target Length: 24.88 US ft
- Target Shadow: 24.16 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin



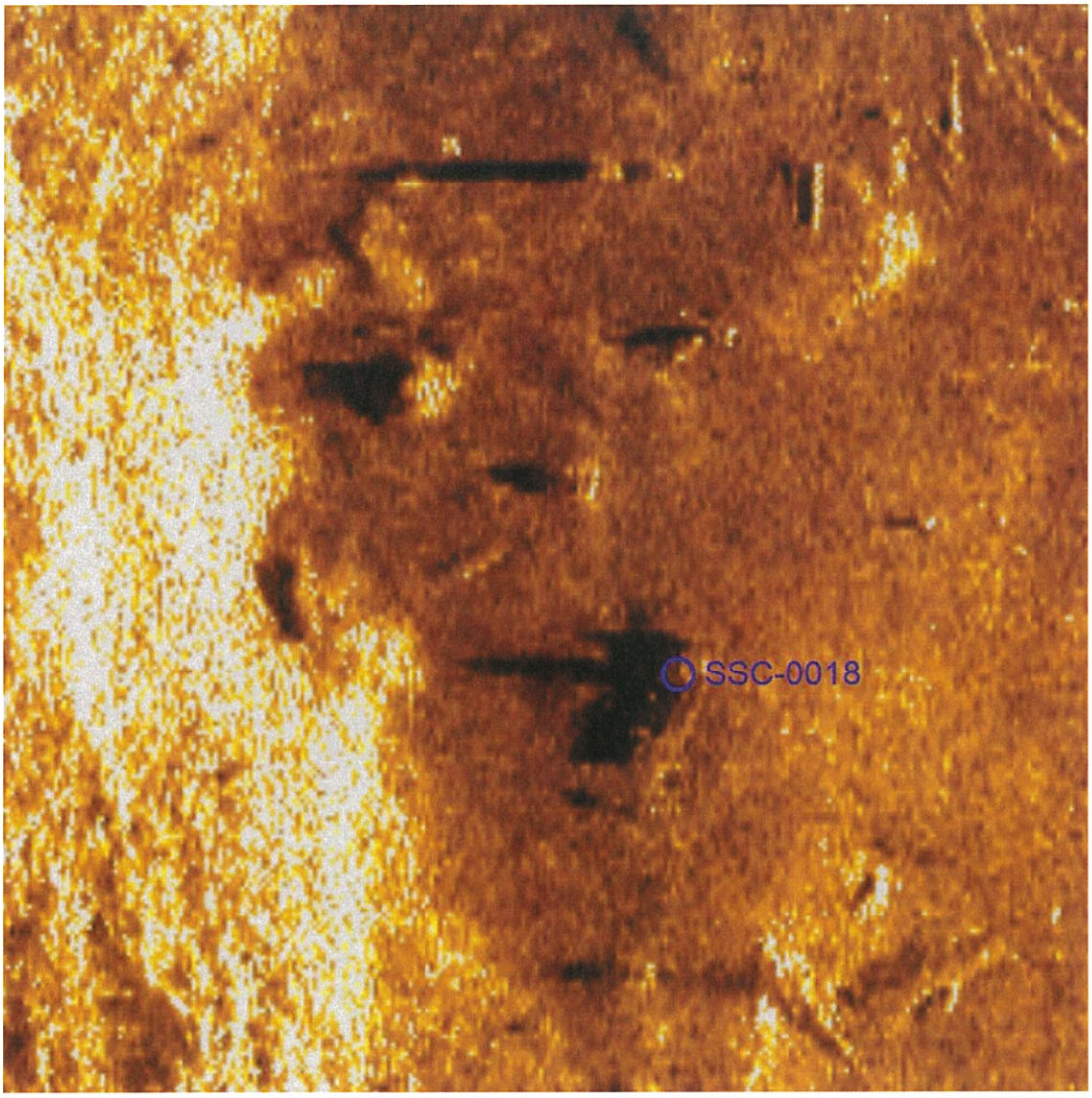

**SSC-0017**

- Sonar Time at Target: 9/29/2017 8:01:49 PM
- Click Position
  42.3933674687 -71.0711658251 (WGS84)
  42.3932706117 -71.0716697292 (NAD27LL)
  42.3933674687 -71.0711658251 (LocalLL)
  (X) 772007.57 (Y) 2968664.33 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 27983
- Range to target: 32.15 US ft

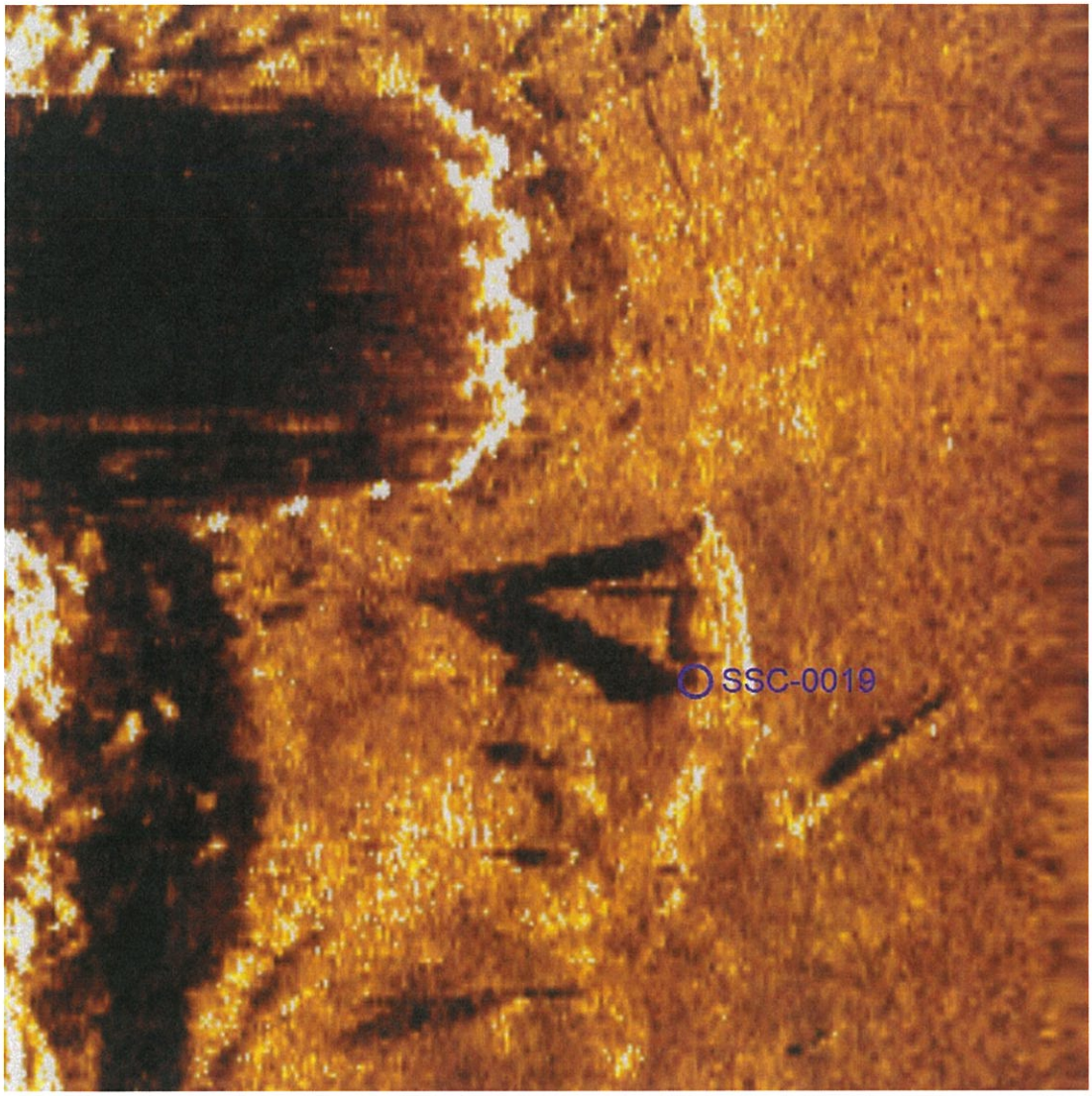
**Dimensions and attributes**

- Target Width: 16.10 US ft
- Target Height: 0.00 US ft
- Target Length: 19.68 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

Wynn Boston Harbor Sediment Remediation Debris Survey




| SSC-0018 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:01:44 PM<br>• Click Position<br>42.3933281579 -71.0712180901 (WGS84)<br>42.3932313006 -71.0717219932 (NAD27LL)<br>42.3933281579 -71.0712180901 (LocalLL)<br>(X) 771993.52 (Y) 2968649.93 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf<br>• Ping Number: 27936<br>• Range to target: 35.55 US ft | • Target Width: 3.04 US ft<br>• Target Height: 2.84 US ft<br>• Target Length: 8.14 US ft<br>• Target Shadow: 9.39 US ft<br>• Classification1: debris<br>• Description: |

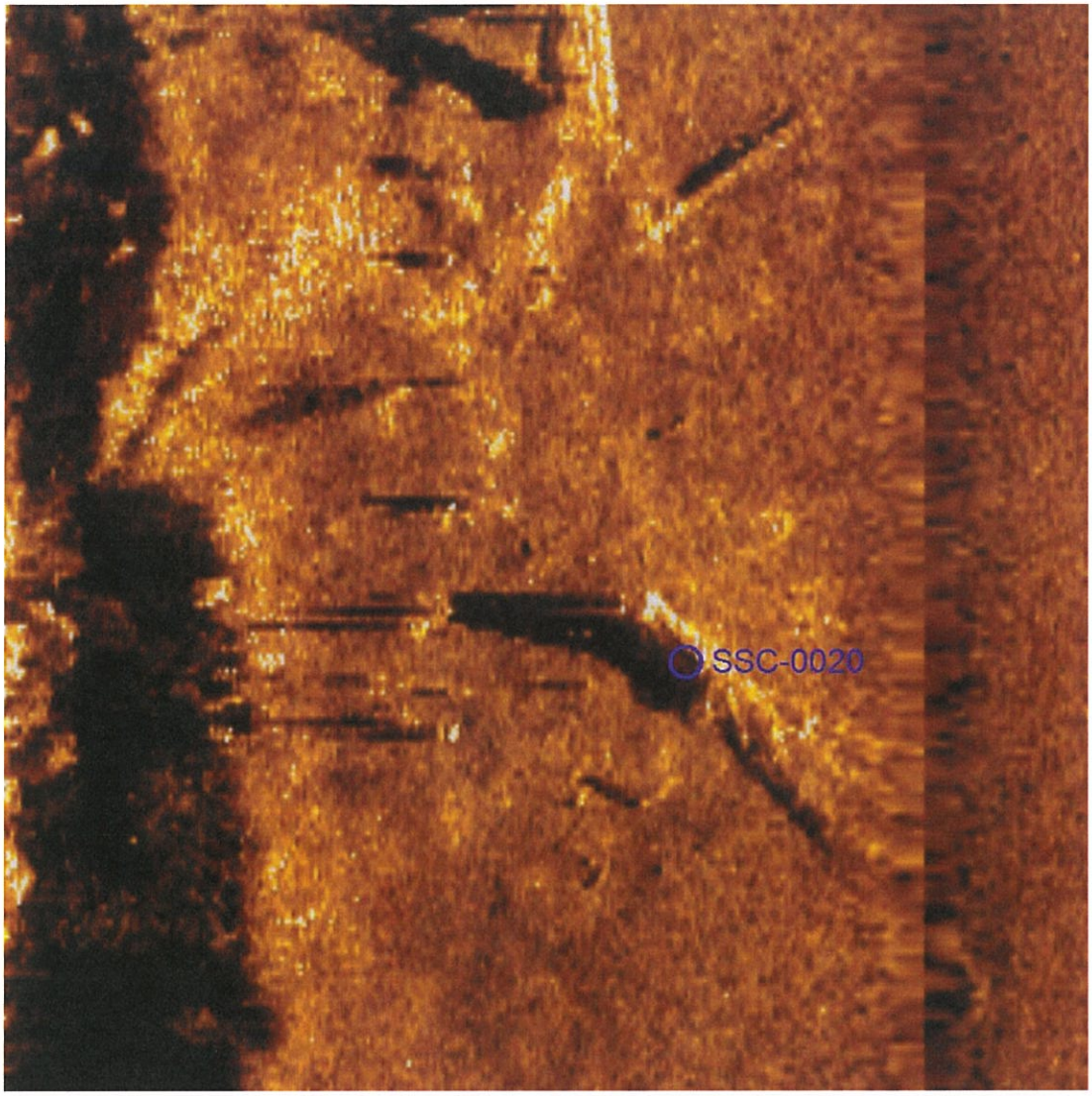



**SSC-0019**

- Sonar Time at Target: 9/29/2017 8:02:09 PM
- Click Position
  42.3935630371 -71.0709795340 (WGS84)
  42.3934661821 -71.0714834408 (NAD27LL)
  42.3935630371 -71.0709795340 (LocalLL)
  (X) 772057.53 (Y) 2968735.85 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28172
- Range to target: 22.87 US ft

**Dimensions and attributes**

- Target Width: 4.11 US ft
- Target Height: 4.70 US ft
- Target Length: 10.28 US ft
- Target Shadow: 14.75 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

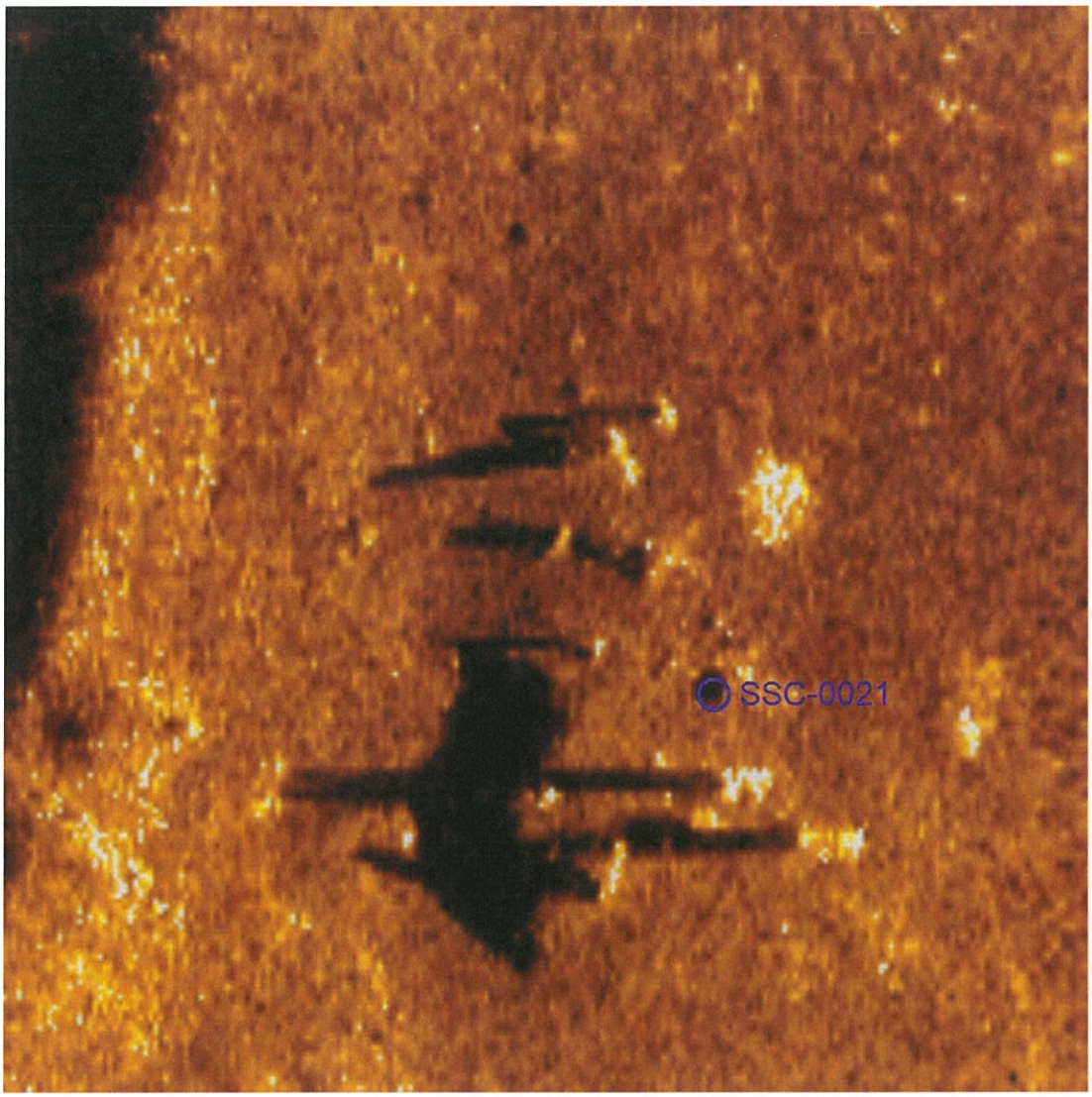



**SSC-0020**

- Sonar Time at Target: 9/29/2017 8:02:17 PM
- Click Position
  42.3936454339 -71.0708894091 (WGS84)
  42.3935485798 -71.0713933174 (NAD27LL)
  42.3936454339 -71.0708894091 (LocalLL)
  (X) 772081.73 (Y) 2968766.00 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28248
- Range to target: 15.03 US ft

**Dimensions and attributes**

- Target Width: 1.71 US ft
- Target Height: 5.68 US ft
- Target Length: 10.97 US ft
- Target Shadow: 15.26 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

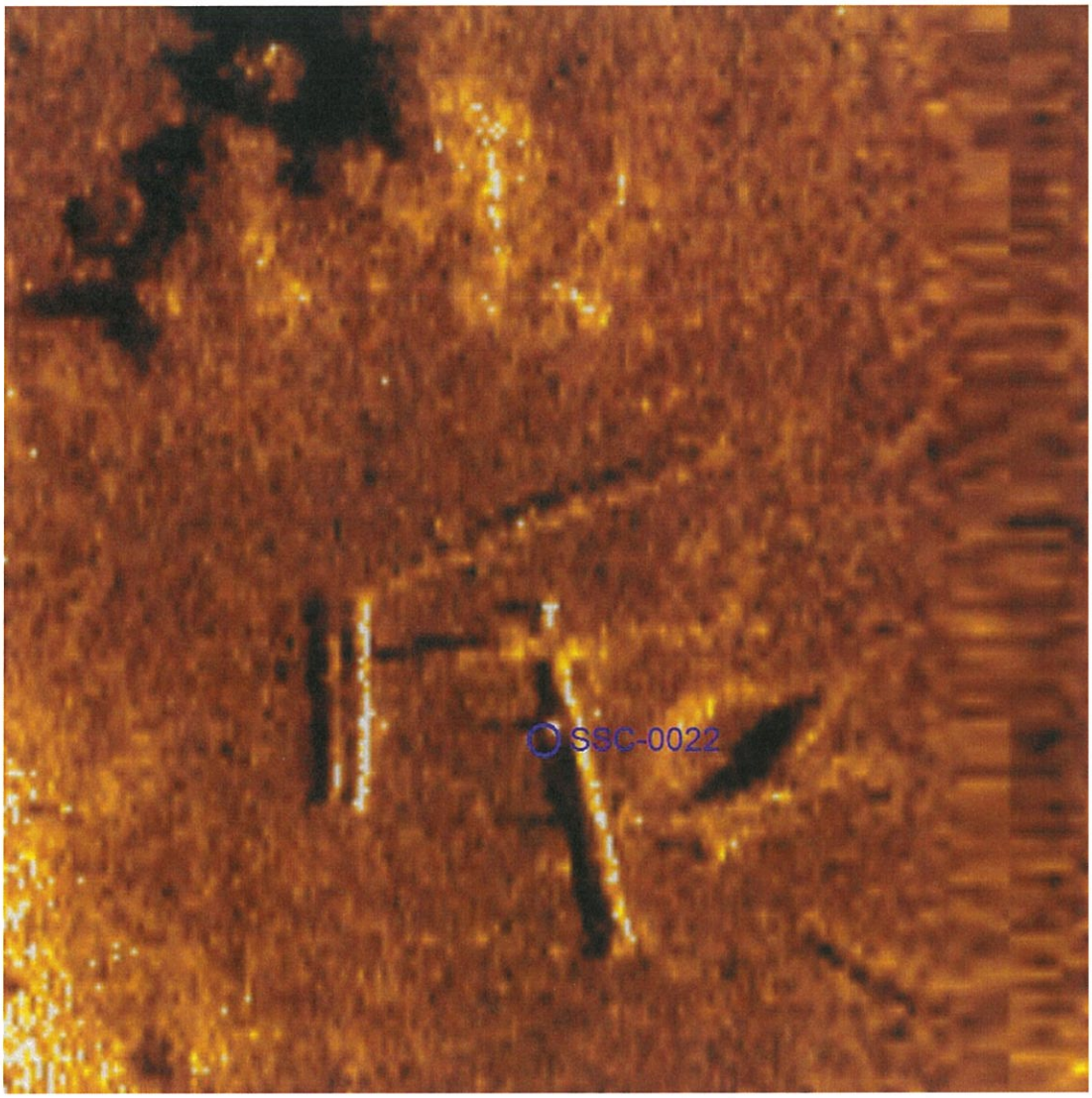



**SSC-0021**

- Sonar Time at Target: 9/29/2017 8:02:34 PM
- Click Position
  42.3938253369 -71.0707232469 (WGS84)
  42.3937284847 -71.0712271575 (NAD27LL)
  42.3938253369 -71.0707232469 (LocalLL)
  (X) 772126.28 (Y) 2968831.79 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28408
- Range to target: 21.96 US ft

**Dimensions and attributes**

- Target Width: 15.02 US ft
- Target Height: 5.58 US ft
- Target Length: 21.84 US ft
- Target Shadow: 19.01 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin

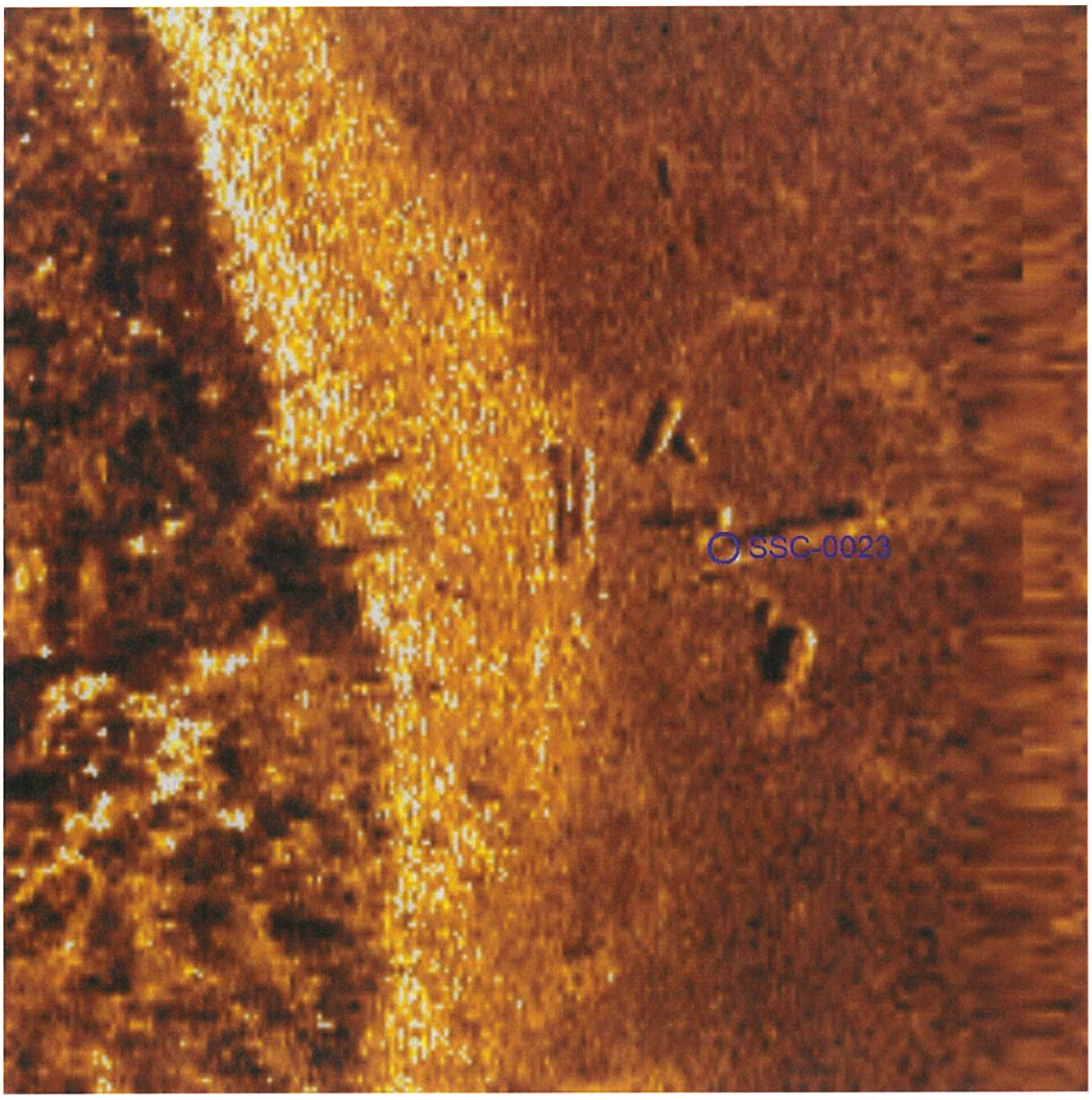



**SSC-0022**

- Sonar Time at Target: 9/29/2017 8:02:59 PM
- Click Position
  42.3940613018 -71.0704801377 (WGS84)
  42.3939644520 -71.0709840521 (NAD27LL)
  42.3940613018 -71.0704801377 (LocalLL)
  (X) 772191.52 (Y) 2968918.11 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28653
- Range to target: 18.17 US ft

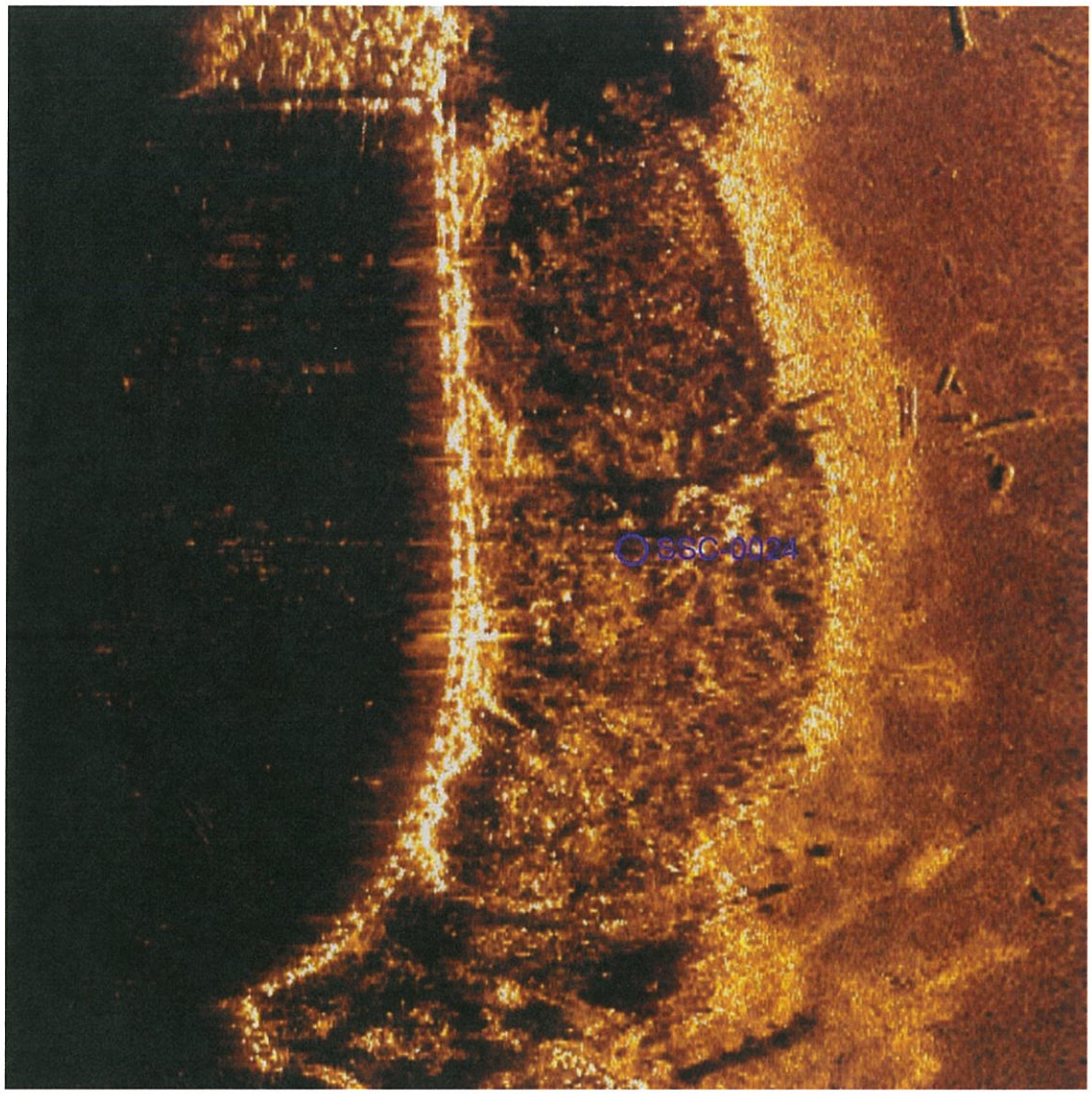
**Dimensions and attributes**

- Target Width: 0.73 US ft
- Target Height: 1.00 US ft
- Target Length: 15.02 US ft
- Target Shadow: 1.86 US ft
- Classification1: piling
- Description: Debris associated with demolished dolphin



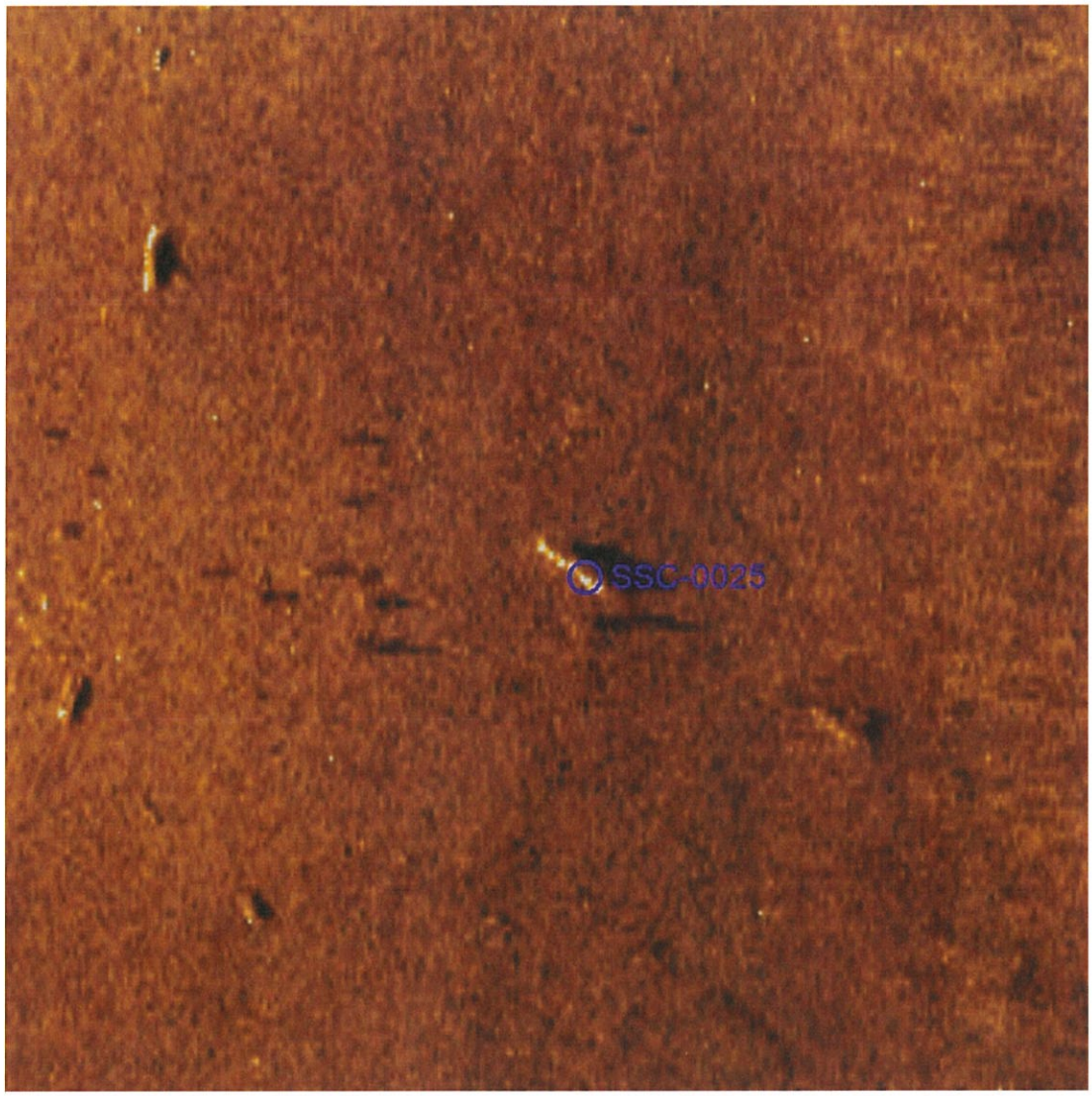

| SSC-0023 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:03:11 PM<br>• Click Position<br>42.3941877073 -71.0703689750 (WGS84)<br>42.3940908589 -71.0708728910 (NAD27LL)<br>42.3941877073 -71.0703689750 (LocalLL)<br>(X) 772221.31 (Y) 2968964.33 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf<br>• Ping Number: 28767<br>• Range to target: 14.38 US ft | • Target Width: 2.39 US ft<br>• Target Height: 0.00 US ft<br>• Target Length: 12.19 US ft<br>• Target Shadow: 0.00 US ft<br>• Classification1: piling<br>• Description: |

Wynn Boston Harbor Sediment Remediation Debris Survey




| SSC-0024 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:03:14 PM<br>• Click Position<br>42.3942839503 -71.0704490500 (WGS84)<br>42.3941871038 -71.0709529630 (NAD27LL)<br>42.3942839503 -71.0704490500 (LocalLL)<br>(X) 772199.51 (Y) 2968999.29 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf<br>• Ping Number: 28797<br>• Range to target: 52.15 US ft | • Target Width: 36.60 US ft<br>• Target Height: 0.00 US ft<br>• Target Length: 80.41 US ft<br>• Target Shadow: 0.00 US ft<br>• Classification1: gravel<br>• Description: |

Wynn Boston Harbor Sediment Remediation Debris Survey

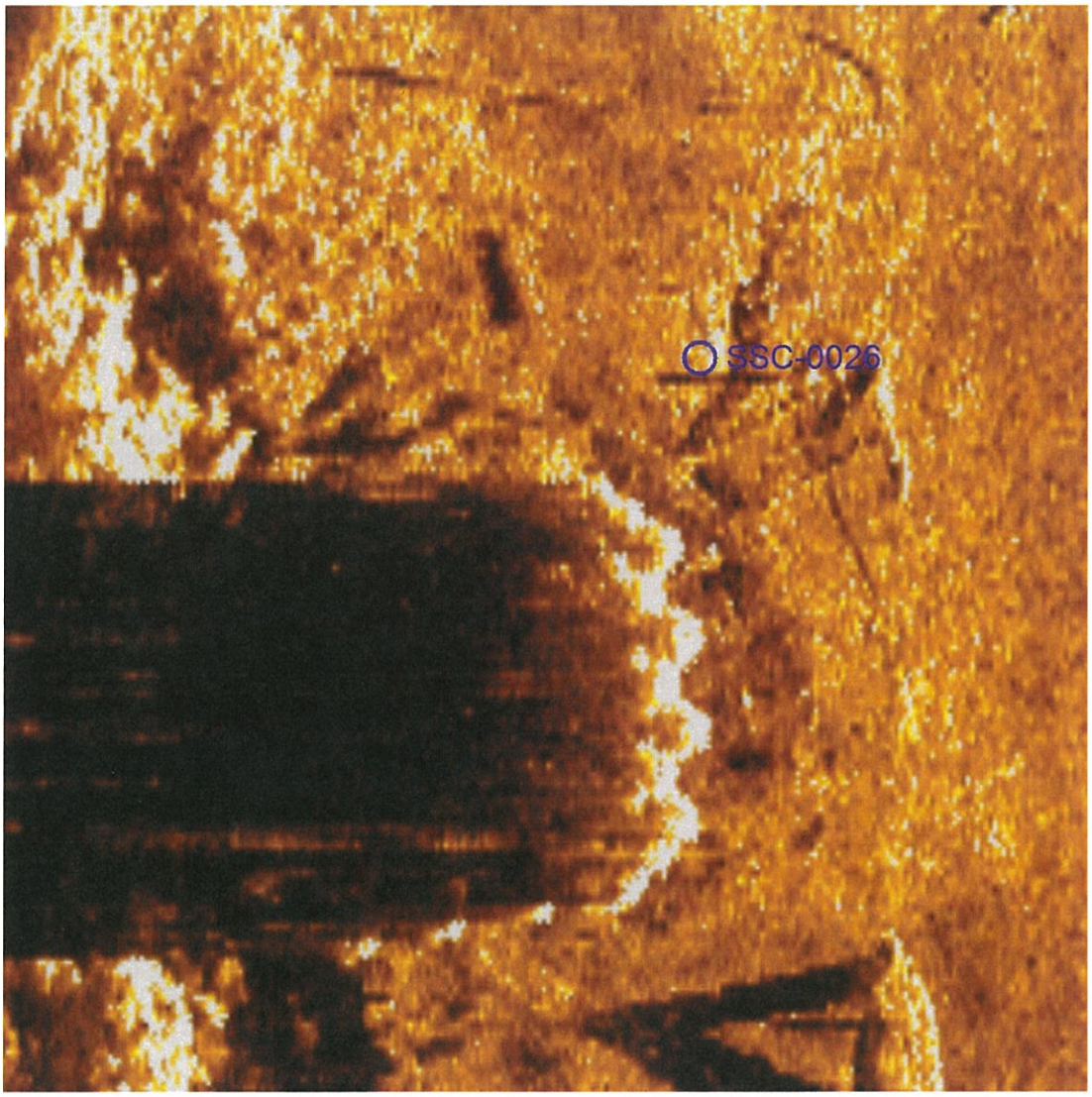



**SSC-0025**

- Sonar Time at Target: 9/29/2017 8:02:02 PM
- Click Position
  42.3933864313 -71.0707690511 (WGS84)
  42.3932895725 -71.0712729649 (NAD27LL)
  42.3933864313 -71.0707690511 (LocalLL)
  (X) 772114.71 (Y) 2968671.78 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28107
- Range to target: 56.73 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 7.82 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:



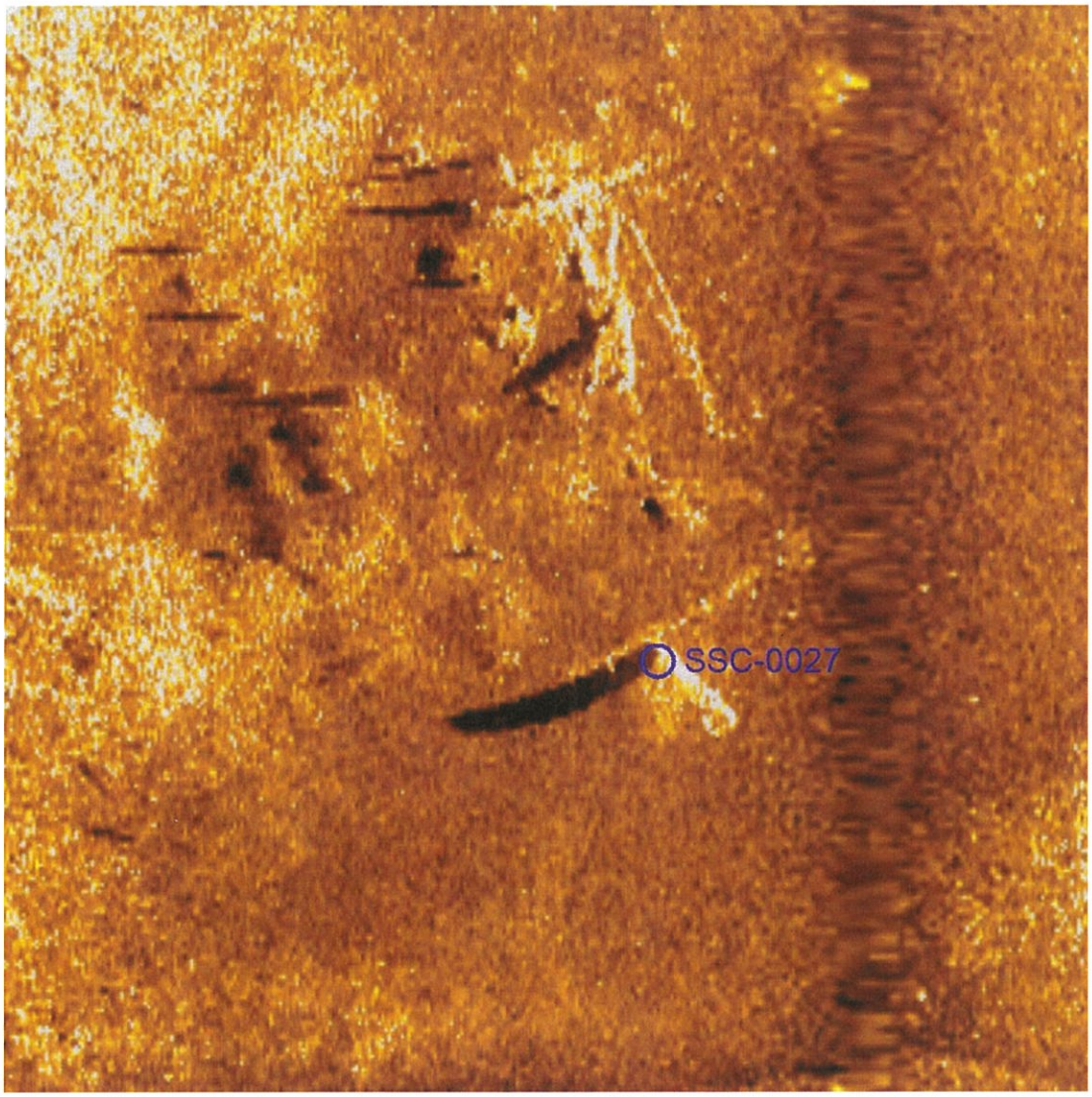

**SSC-0026**

- Sonar Time at Target: 9/29/2017 8:02:00 PM
- Click Position
  42.3934808741 -71.0710766284 (WGS84)
  42.3933840184 -71.0715805336 (NAD27LL)
  42.3934808741 -71.0710766284 (LocalLL)
  (X) 772031.45 (Y) 2968705.78 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf
- Ping Number: 28087
- Range to target: 32.68 US ft

**Dimensions and attributes**

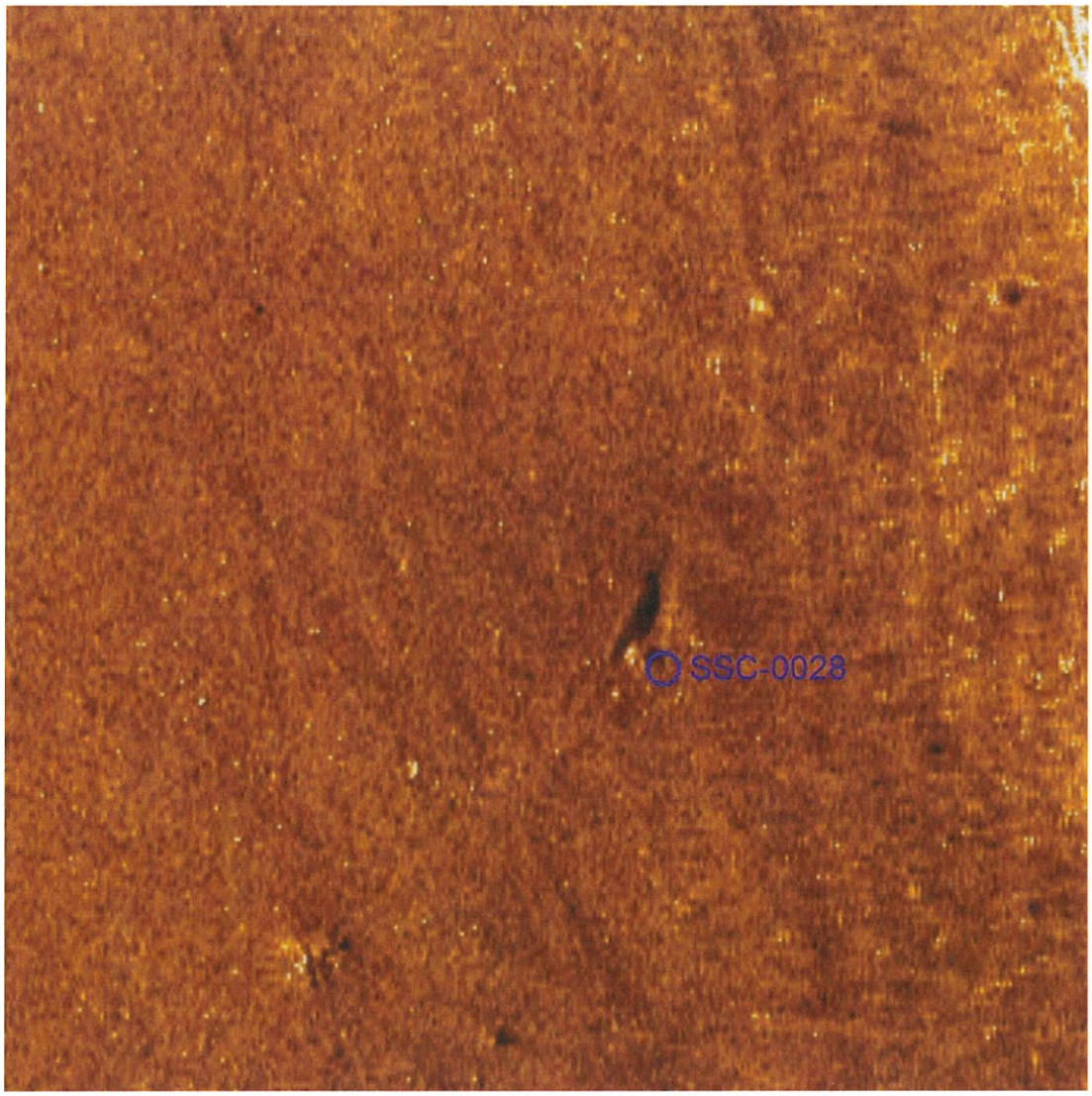
- Target Width: 5.55 US ft
- Target Height: 0.00 US ft
- Target Length: 11.94 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description: Debris associated with demolished dolphin

Wynn Boston Harbor Sediment Remediation Debris Survey

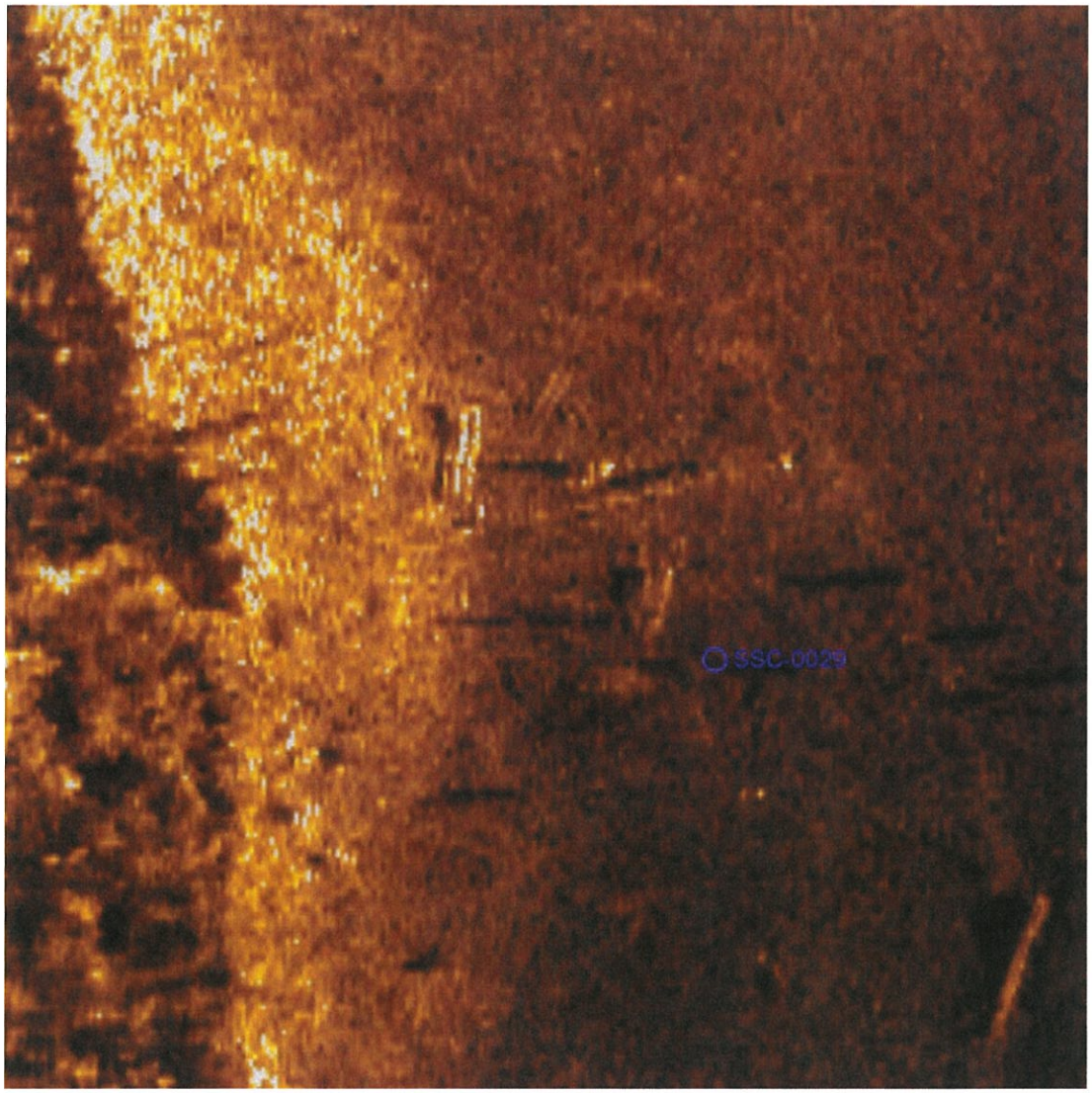



| SSC-0027 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:01:22 PM<br>• Click Position<br>42.3930724354 -71.0714049055 (WGS84)<br>42.3929755751 -71.0719088064 (NAD27LL)<br>42.3930724354 -71.0714049055 (LocalLL)<br>(X) 771943.53 (Y) 2968556.49 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929195909.jsf<br>• Ping Number: 27720<br>• Range to target: 15.42 US ft | • Target Width: 0.00 US ft<br>• Target Height: 6.45 US ft<br>• Target Length: 0.00 US ft<br>• Target Shadow: 15.22 US ft<br>• Classification1: piling<br>• Description: |

Wynn Boston Harbor Sediment Remediation Debris Survey




| SSC-0028 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:12:28 PM<br>• Click Position<br>42.3930318795 -71.0709459781 (WGS84)<br>42.3929350162 -71.0714498910 (NAD27LL)<br>42.3930318795 -71.0709459781 (LocalLL)<br>(X) 772067.57 (Y) 2968542.33 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf<br>• Ping Number: 34127<br>• Range to target: 74.24 US ft | • Target Width: 2.93 US ft<br>• Target Height: 0.00 US ft<br>• Target Length: 8.65 US ft<br>• Target Shadow: 0.00 US ft<br>• Classification1: piling<br>• Description: |

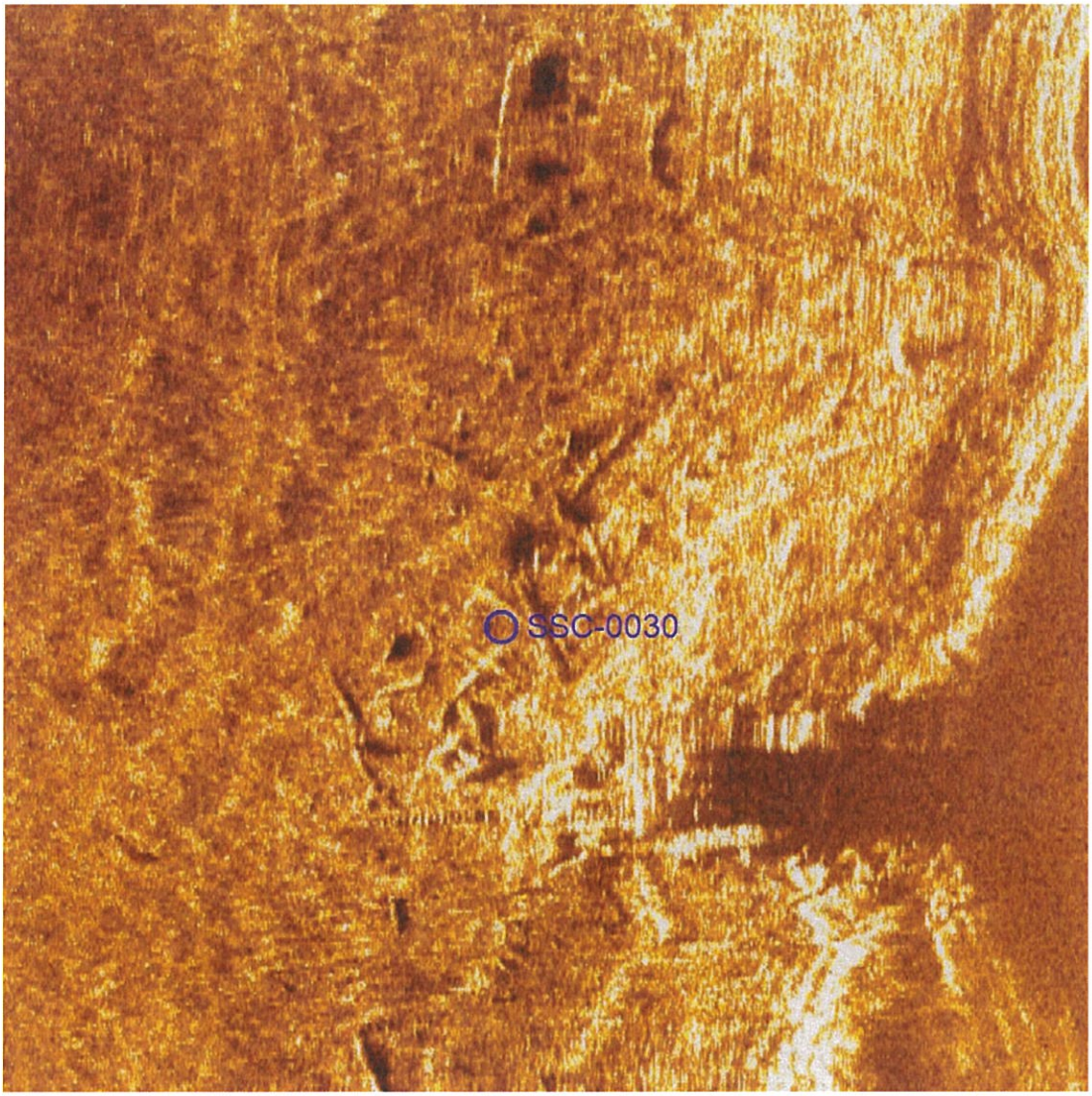



**SSC-0029**

- Sonar Time at Target: 9/29/2017 8:14:05 PM
- Click Position
  42.3941924598 -71.0703502614 (WGS84)
  42.3940956114 -71.0708541778 (NAD27LL)
  42.3941924598 -71.0703502614 (LocalLL)
  (X) 772226.36 (Y) 2968966.08 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 35058
- Range to target: 32.94 US ft

**Dimensions and attributes**

- Target Width: 6.15 US ft
- Target Height: 0.00 US ft
- Target Length: 15.82 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description:

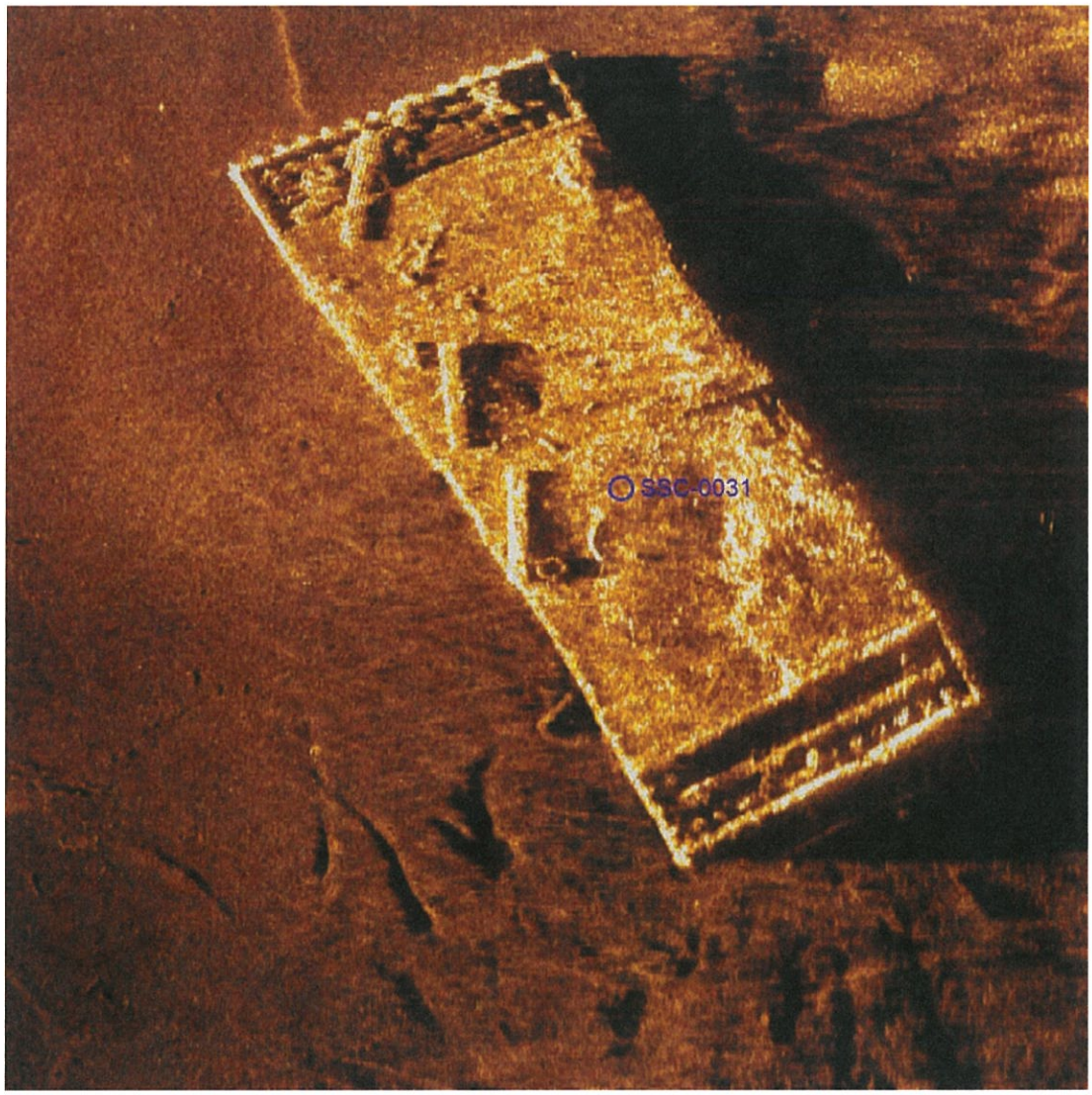



**SSC-0030**

- Sonar Time at Target: 9/29/2017 8:10:55 PM
- Click Position
  42.3919265041 -71.0716065846 (WGS84)
  42.3918296271 -71.0721104918 (NAD27LL)
  42.3919265041 -71.0716065846 (LocalLL)
  (X) 771891.14 (Y) 2968138.61 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 33233
- Range to target: 150.58 US ft

**Dimensions and attributes**

- Target Width: 18.72 US ft
- Target Height: 0.00 US ft
- Target Length: 24.92 US ft
- Target Shadow: 0.00 US ft
- Classification1: debris
- Description:

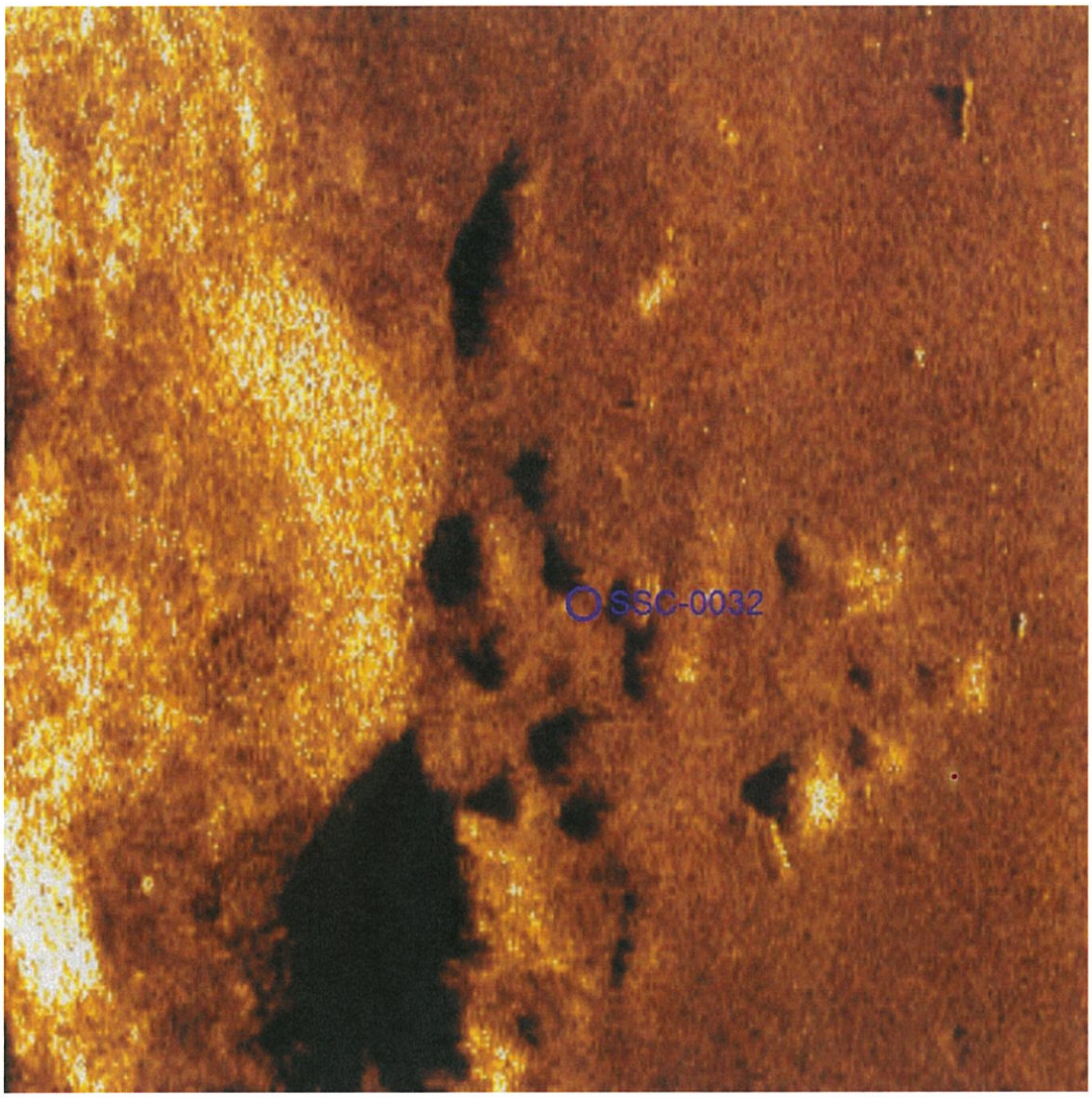



**SSC-0031**

- Sonar Time at Target: 9/29/2017 8:14:01 PM
- Click Position
  42.3939832628 -71.0699942558 (WGS84)
  42.3938864094 -71.0704981833 (NAD27LL)
  42.3939832628 -71.0699942558 (LocalLL)
  (X) 772322.91 (Y) 2968890.33 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929201011.jsf
- Ping Number: 35021
- Range to target: 88.62 US ft

**Dimensions and attributes**

- Target Width: 39.15 US ft
- Target Height: 2.87 US ft
- Target Length: 96.21 US ft
- Target Shadow: 25.12 US ft
- Classification1: wreck
- Description:

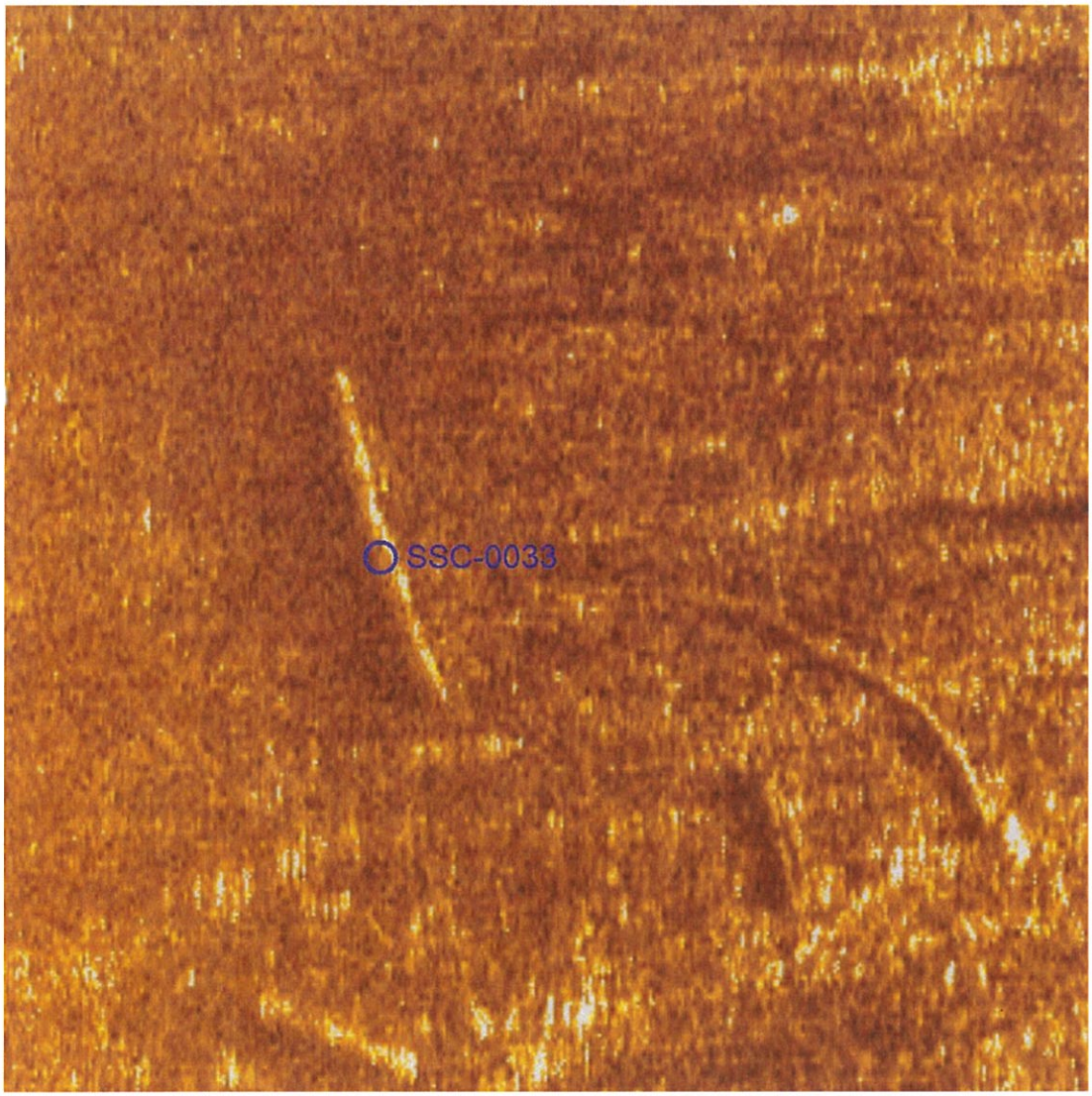



**SSC-0032**

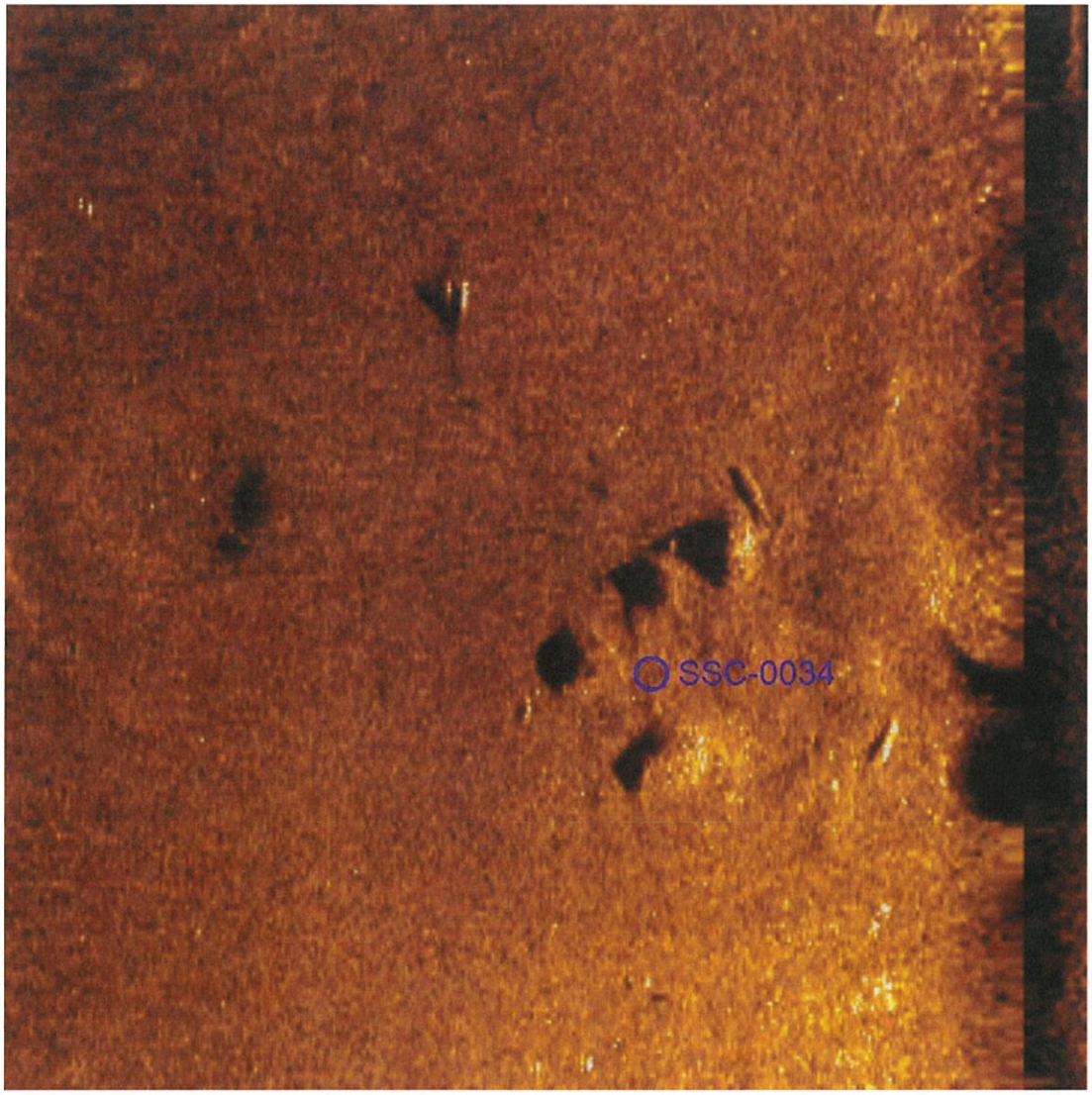
- Sonar Time at Target: 9/29/2017 8:26:25 PM
- Click Position
  42.3939275729 -71.0705861138 (WGS84)
  42.3938307216 -71.0710900269 (NAD27LL)
  42.3939275729 -71.0705861138 (LocalLL)
  (X) 772163.14 (Y) 2968869.23 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929202250.jsf
- Ping Number: 42178
- Range to target: 74.11 US ft

**Dimensions and attributes**

- Target Width: 23.17 US ft
- Target Height: 0.68 US ft
- Target Length: 31.65 US ft
- Target Shadow: 4.06 US ft
- Classification1: boulders
- Description: Debris associated with demolished dolphin




| SSC-0033 | Dimensions and attributes |
|---|---|
| • Sonar Time at Target: 9/29/2017 8:33:02 PM<br>• Click Position<br>42.3911314589 -71.0716188499 (WGS84)<br>42.3910345696 -71.0721227647 (NAD27LL)<br>42.3911314589 -71.0716188499 (LocalLL)<br>(X) 771889.29 (Y) 2967848.86 (Projected Coordinates)<br>• Map Projection: MA83F<br>• Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929202828.jsf<br>• Ping Number: 45995<br>• Range to target: 195.67 US ft | • Target Width: 2.60 US ft<br>• Target Height: 0.31 US ft<br>• Target Length: 26.01 US ft<br>• Target Shadow: 4.42 US ft<br>• Classification1: piling<br>• Description: |

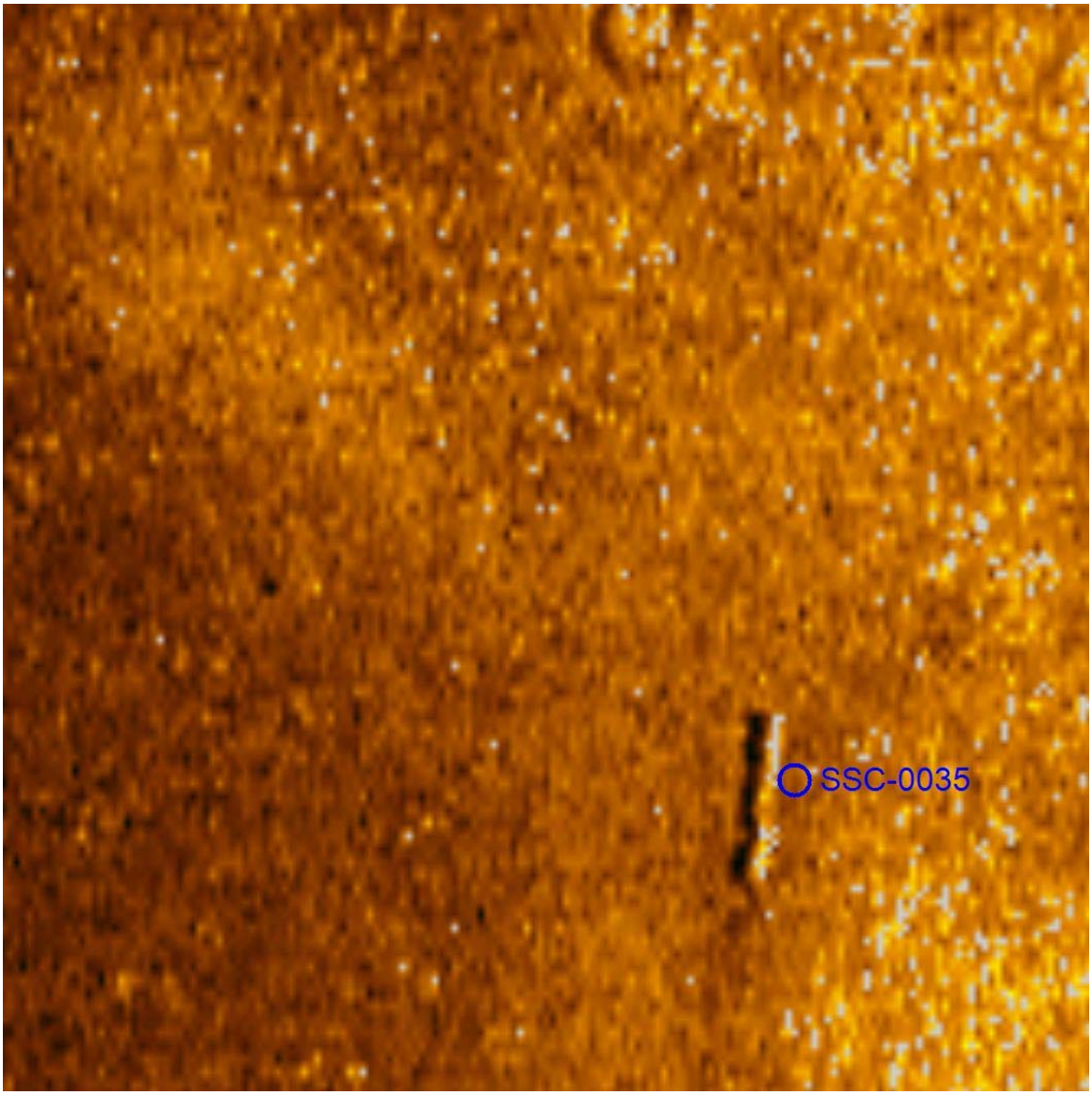



**SSC-0034**

- Sonar Time at Target: 9/29/2017 8:44:22 PM
- Click Position
  42.3938868395 -71.0705173347 (WGS84)
  42.3937899873 -71.0710212499 (NAD27LL)
  42.3938868395 -71.0705173347 (LocalLL)
  (X) 772181.79 (Y) 2968854.48 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929204329.jsf
- Ping Number: 52534
- Range to target: 30.06 US ft

**Dimensions and attributes**

- Target Width: 12.37 US ft
- Target Height: 1.12 US ft
- Target Length: 18.75 US ft
- Target Shadow: 6.05 US ft
- Classification1: boulders
- Description:



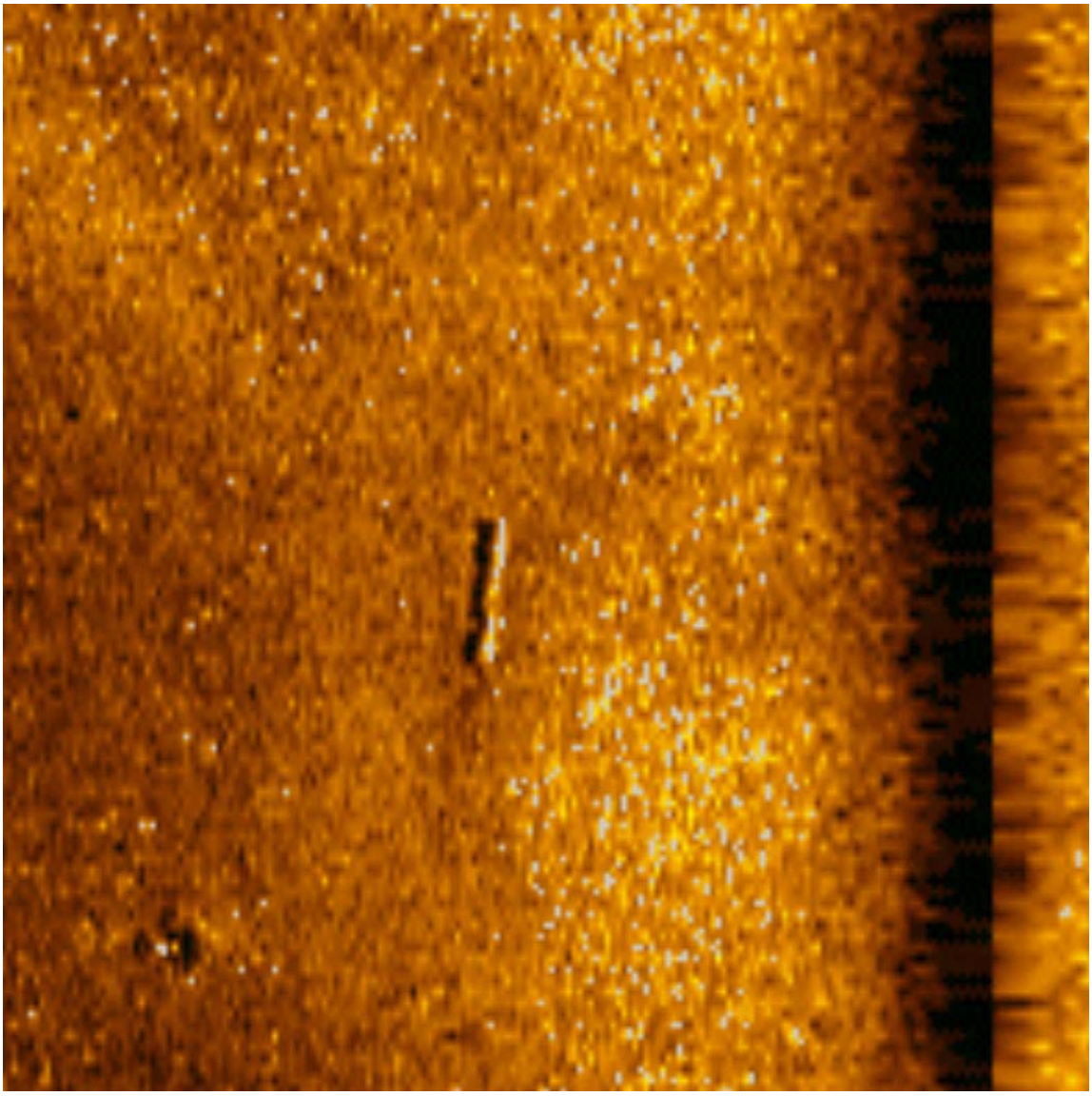

**SSC-0035**

- Sonar Time at Target: 9/29/2017 8:52:42 PM
- Click Position
  42.3924848961 -71.0736158890 (WGS84)
  42.3923880379 -71.0741197399 (NAD27LL)
  42.3924848961 -71.0736158890 (LocalLL)
  (X) 771347.35 (Y) 2968339.38 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57346
- Range to target: 19.74 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 6.95 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

Wynn Boston Harbor Sediment Remediation Debris Survey

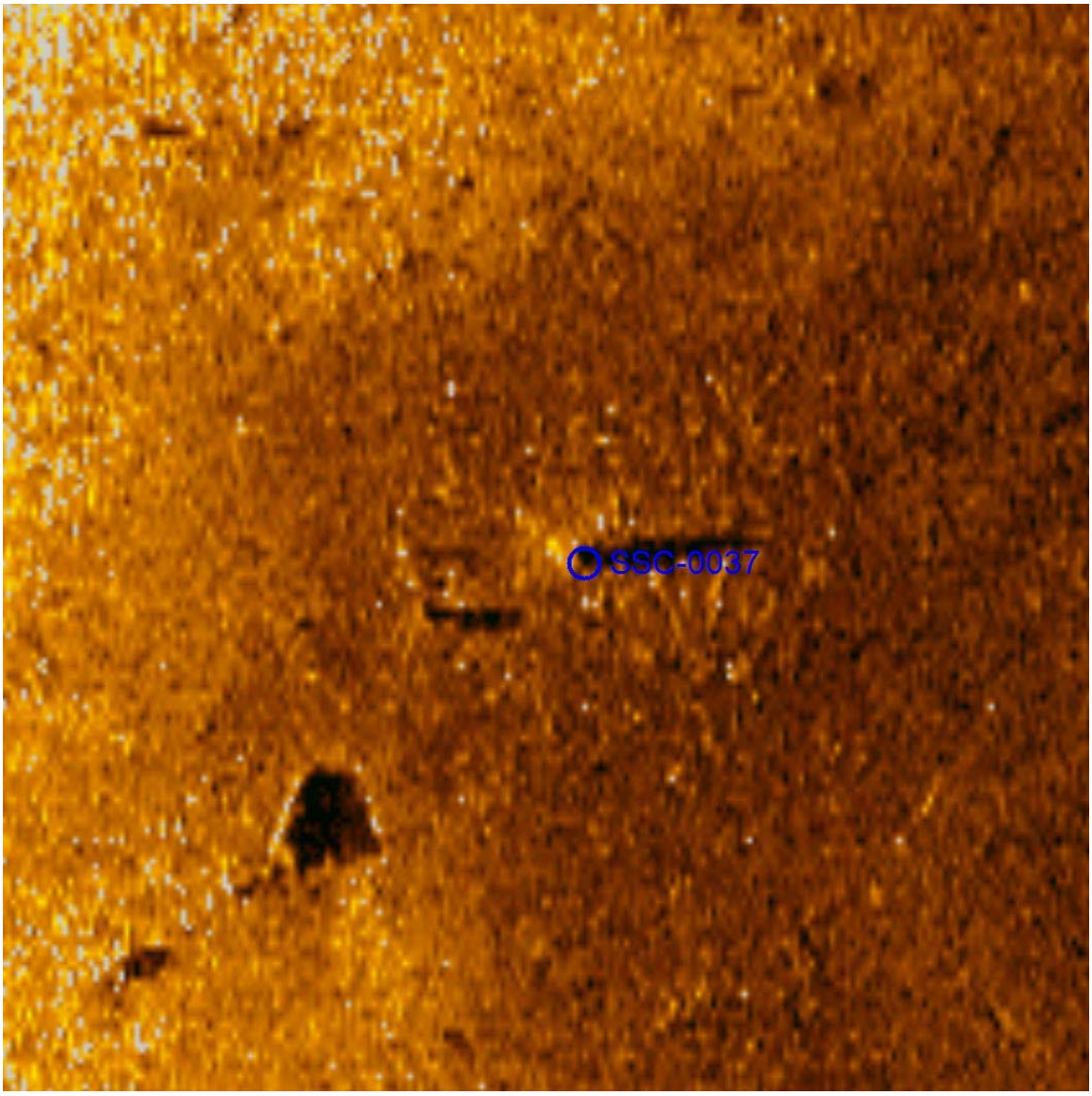


**SSC-0036**

- Sonar Time at Target: 9/29/2017 8:52:50 PM
- Click Position
  42.3925544361 -71.0736927358 (WGS84)
  42.3924575794 -71.0741965840 (NAD27LL)
  42.3925544361 -71.0736927358 (LocalLL)
  (X) 771326.46 (Y) 2968364.62 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57421
- Range to target: 17.12 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 8.50 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

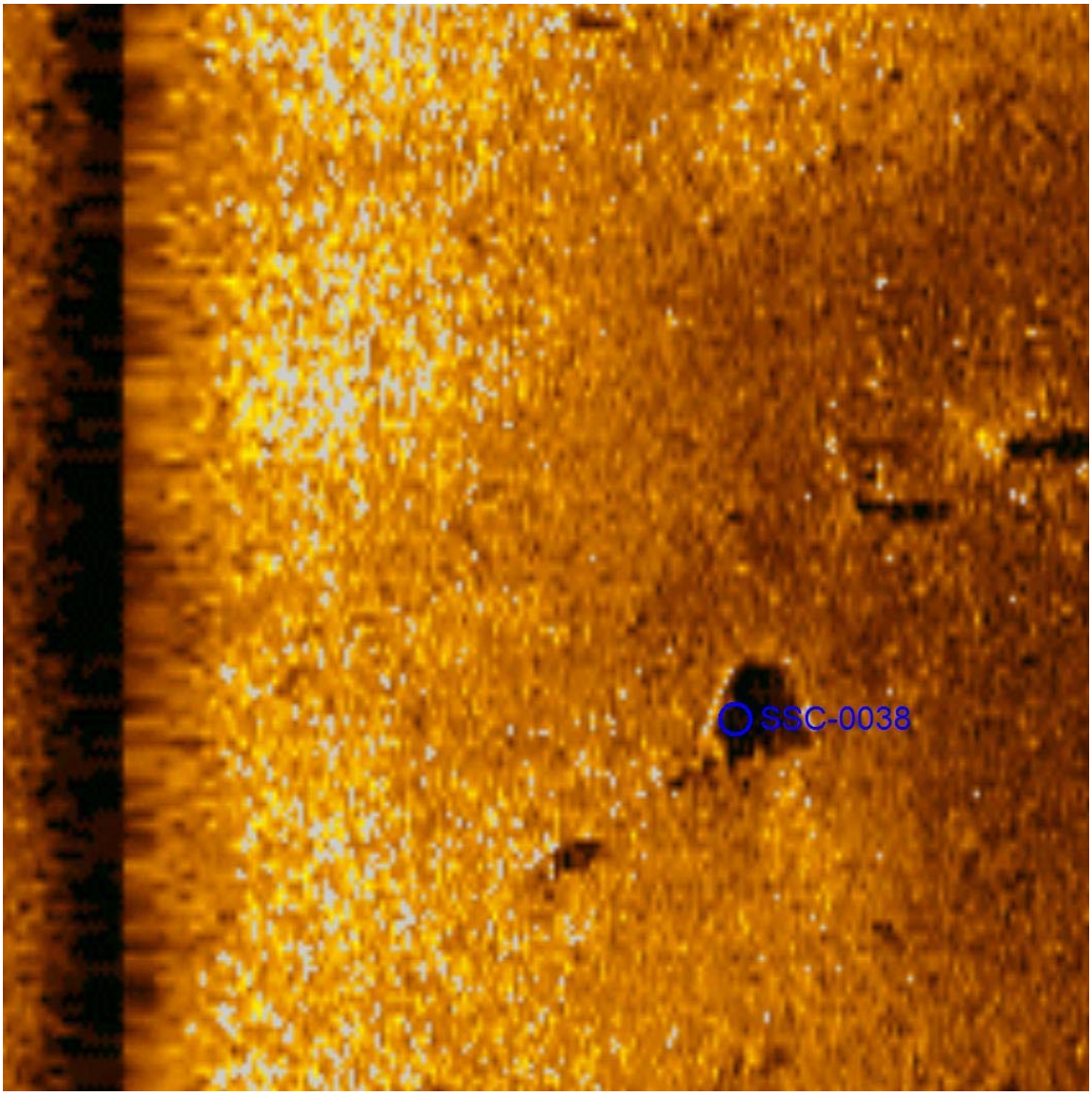



**SSC-0037**

- Sonar Time at Target: 9/29/2017 8:52:40 PM
- Click Position
  42.3925648145 -71.0734171593 (WGS84)
  42.3924679566 -71.0739210144 (NAD27LL)
  42.3925648145 -71.0734171593 (LocalLL)
  (X) 771400.88 (Y) 2968368.77 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57320
- Range to target: 40.13 US ft

**Dimensions and attributes**

- Target Width: 3.25 US ft
- Target Height: 1.79 US ft
- Target Length: 3.00 US ft
- Target Shadow: 6.01 US ft
- Classification1: boulders
- Description:

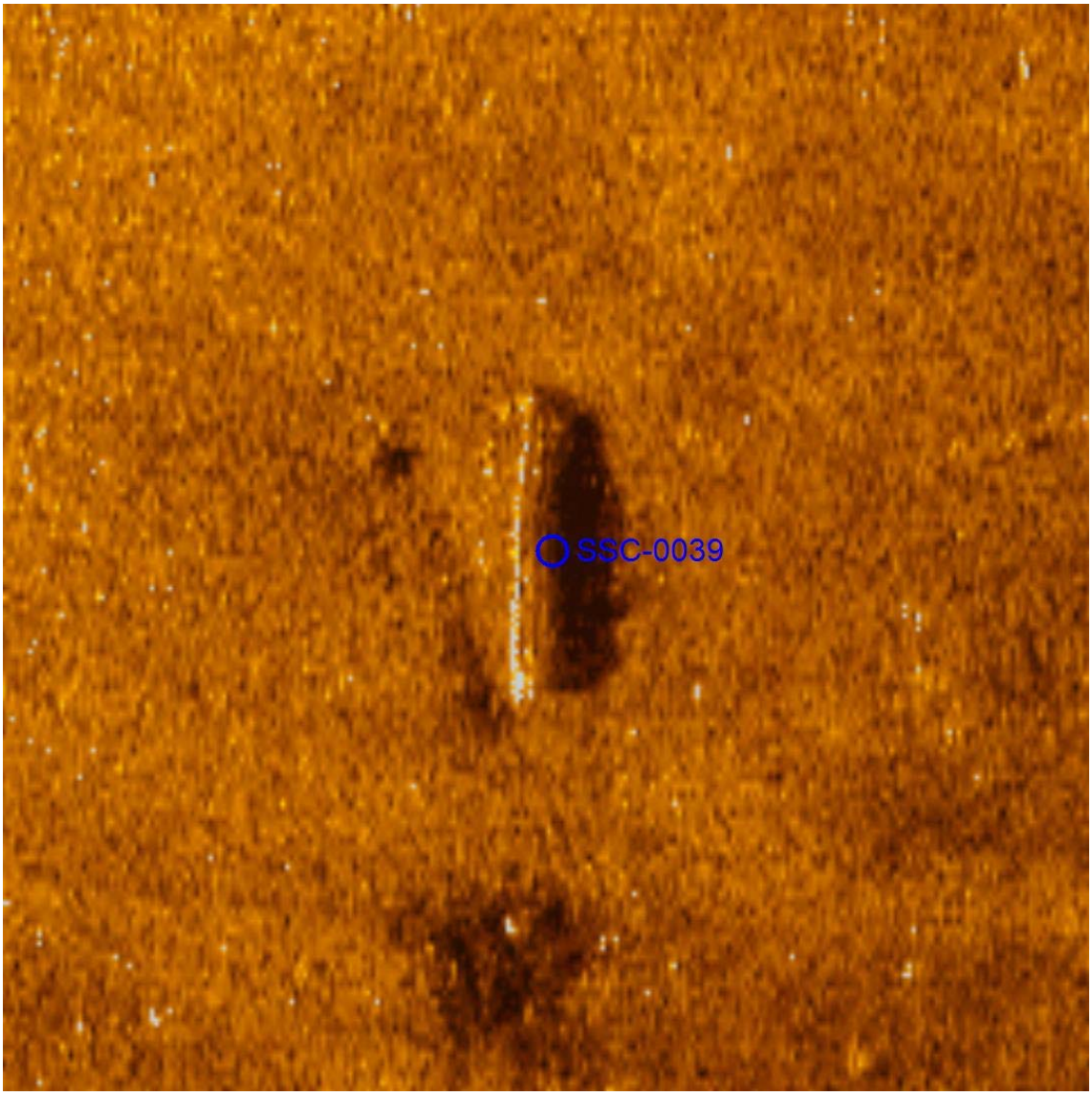



**SSC-0038**

- Sonar Time at Target: 9/29/2017 8:52:42 PM
- Click Position
  42.3925690099 -71.0734824528 (WGS84)
  42.3924721524 -71.0739863062 (NAD27LL)
  42.3925690099 -71.0734824528 (LocalLL)
  (X) 771383.24 (Y) 2968370.22 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205115.jsf
- Ping Number: 57346
- Range to target: 27.58 US ft

**Dimensions and attributes**

- Target Width: 2.81 US ft
- Target Height: 1.53 US ft
- Target Length: 4.40 US ft
- Target Shadow: 3.70 US ft
- Classification1: debris
- Description:

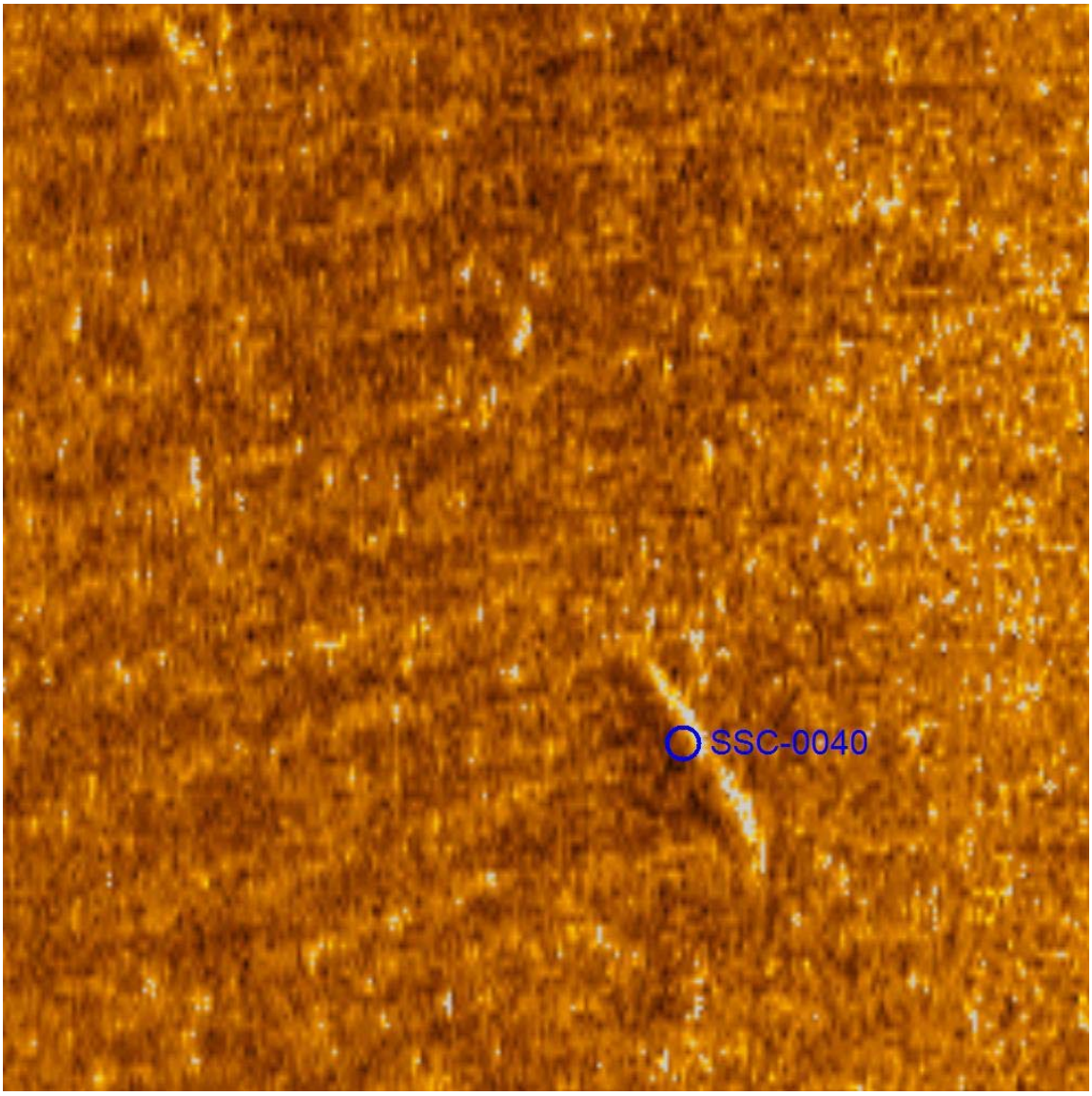



**SSC-0039**

- Sonar Time at Target: 9/29/2017 8:57:44 PM
- Click Position
  42.3921150127 -71.0721862543 (WGS84)
  42.3920181415 -71.0726901449 (NAD27LL)
  42.3921150127 -71.0721862543 (LocalLL)
  (X) 771734.21 (Y) 2968206.52 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929205737.jsf
- Ping Number: 60252
- Range to target: 104.26 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 15.31 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

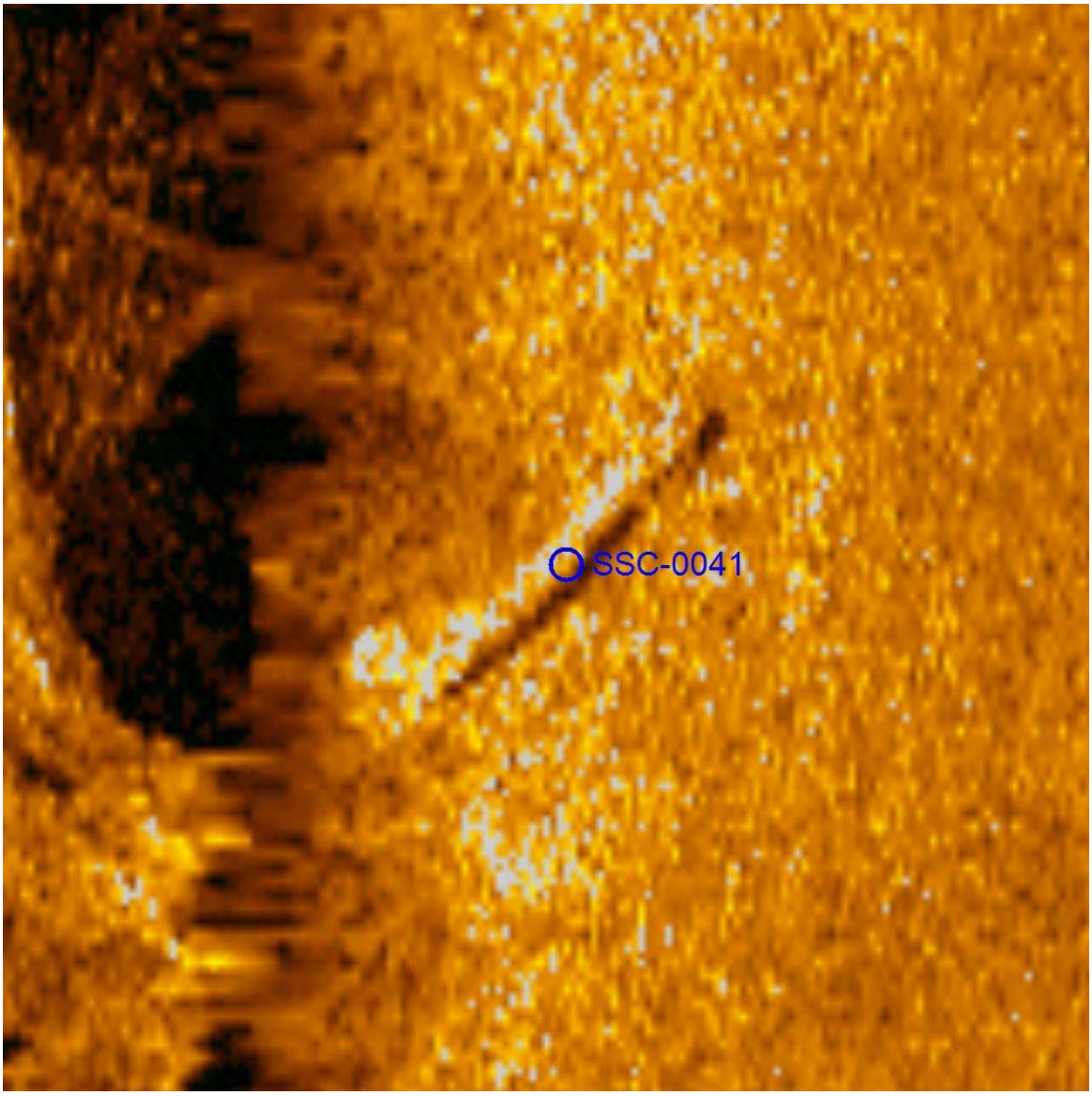



**SSC-0040**

- Sonar Time at Target: 9/29/2017 9:01:12 PM
- Click Position
  42.3929391299 -71.0728842048 (WGS84)
  42.3928422750 -71.0733880696 (NAD27LL)
  42.3929391299 -71.0728842048 (LocalLL)
  (X) 771544.17 (Y) 2968505.90 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929210027.jsf
- Ping Number: 62248
- Range to target: 123.00 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 11.60 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:

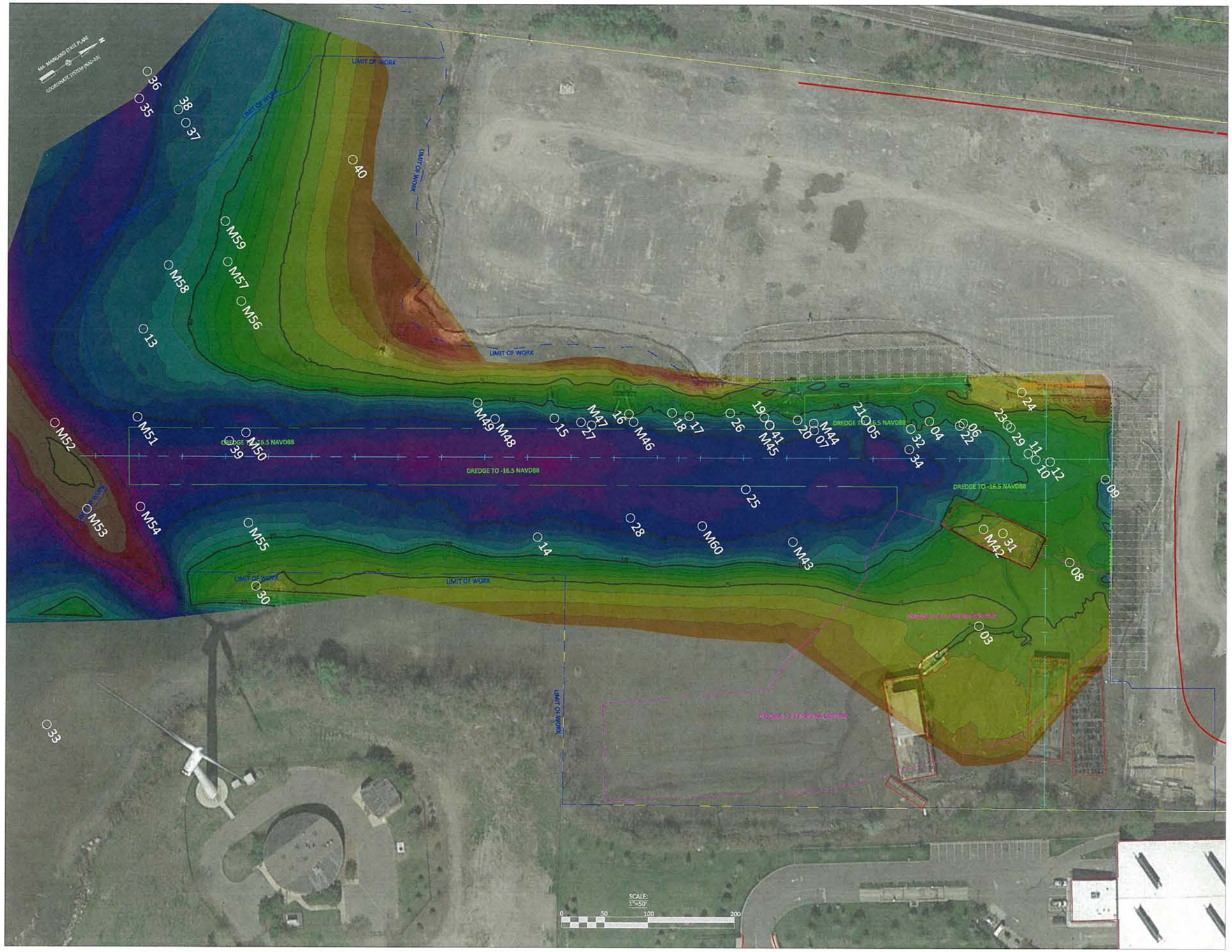



**SSC-0041**

- Sonar Time at Target: 9/29/2017 9:10:53 PM
- Click Position
  42.3935635020 -71.0709379859 (WGS84)
  42.3934666469 -71.0714418937 (NAD27LL)
  42.3935635020 -71.0709379859 (LocalLL)
  (X) 772068.75 (Y) 2968736.08 (Projected Coordinates)
- Map Projection: MA83F
- Acoustic Source File: C:\SonarWiz-Projects\Charter Wynn\SS RAW\20170929211041.jsf
- Ping Number: 67838
- Range to target: 10.85 US ft

**Dimensions and attributes**

- Target Width: 0.00 US ft
- Target Height: 0.00 US ft
- Target Length: 12.66 US ft
- Target Shadow: 0.00 US ft
- Classification1: piling
- Description:




GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 9/23/17 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. SOUNDING DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, A R2 SONIC 2024 200 KHZ MULTI-BEAM SONAR, TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH BASE STATION CORRECTIONS, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. CONTOURS GENERATED FROM 1X1 MINIMUM SOUNDINGS, ACTUAL SOUNDING LOCATION.

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET.

6. SATELLITE IMAGERY APPROXIMATE LOCATION, FOR VISUAL REFERENCE ONLY.

# WYNN BOSTON HARBOR SEDIMENT REMEDIATION

## DEBRIS SURVEY TARGETS ALIGNMENT MINIMUM CONTOURS

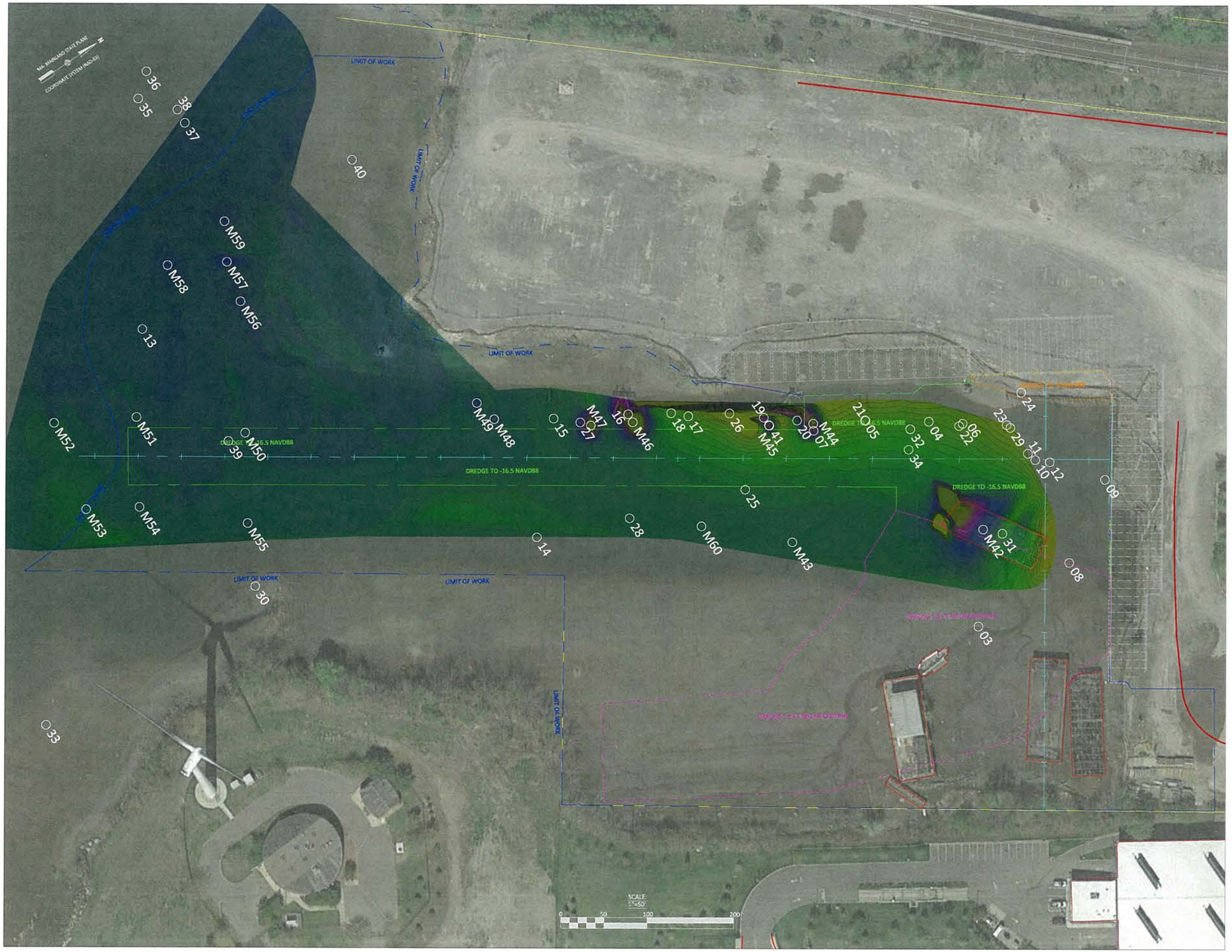
PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

REVISIONS:

| NO: | DATE: | REVISION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| | |
|---|---|
| Date: 10/6/17 | Scale: 1"=50' |
| Drawn By: KT | Chk'd By: ES |
| Project: CHARTER_WYNN_2017 | |
| Sheet Number: 1 of 3 | |




GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 9/29/17 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. MAGNETOMETER DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, AN GEOMETRICS 882 MAGNETOMETER, A TRIMBLE SP585S RTK GPS POSITIONING SYSTEM WITH VRS CORRECTIONS, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. MAGNETOMETER DATA GENERATED USING DATA ON A 2FT SORT, WITH A RANGE OF 48,000-58,000 GAMMA AND CONTOURS STEPS AT 250 GAMMA.

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET.

6. SATELLITE IMAGERY APPROXIMATE LOCATION, FOR VISUAL REFERENCE ONLY.

# WYNN BOSTON HARBOR SEDIMENT REMEDIATION

## DEBRIS SURVEY MAGNETOMETER CONTOURS

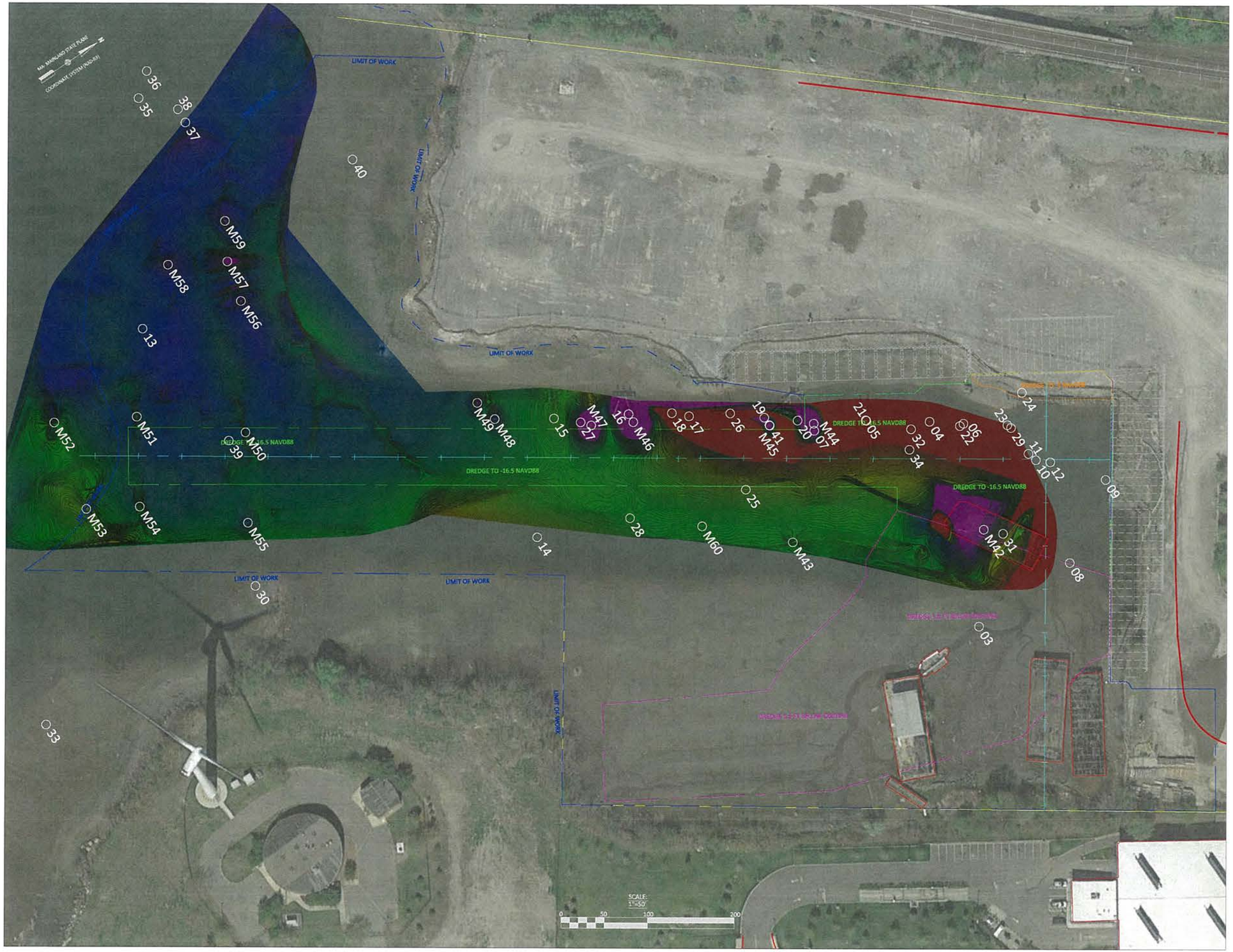
PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

REVISIONS:

| NO: | DATE: | REVISION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| | |
|---|---|
| Date: 10/6/17 | Scale: 1"=50' |
| Drawn By: KT | Chk'd By: ES |
| Project: CHARTER_WYNN_2017 | |
| Sheet Number: 2 of 3 | |




GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS EXISTING ON 9/29/17 AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. MAGNETOMETER DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, AN GEOMETRICS 882 MAGNETOMETER, A TRIMBLE SP5855 RTK GPS POSITIONING SYSTEM WITH VRS CORRECTIONS, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. MAGNETOMETER DATA GENERATED USING DATA ON A 2FT SORT, WITH A RANGE OF 49,900-52,000 GAMMA AND CONTOURS STEPS AT 10 GAMMA.

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET.

6. SATELLITE IMAGERY APPROXIMATE LOCATION, FOR VISUAL REFERENCE ONLY.

# WYNN BOSTON HARBOR SEDIMENT REMEDIATION

## DEBRIS SURVEY MAGNETOMETER CONTOURS

PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

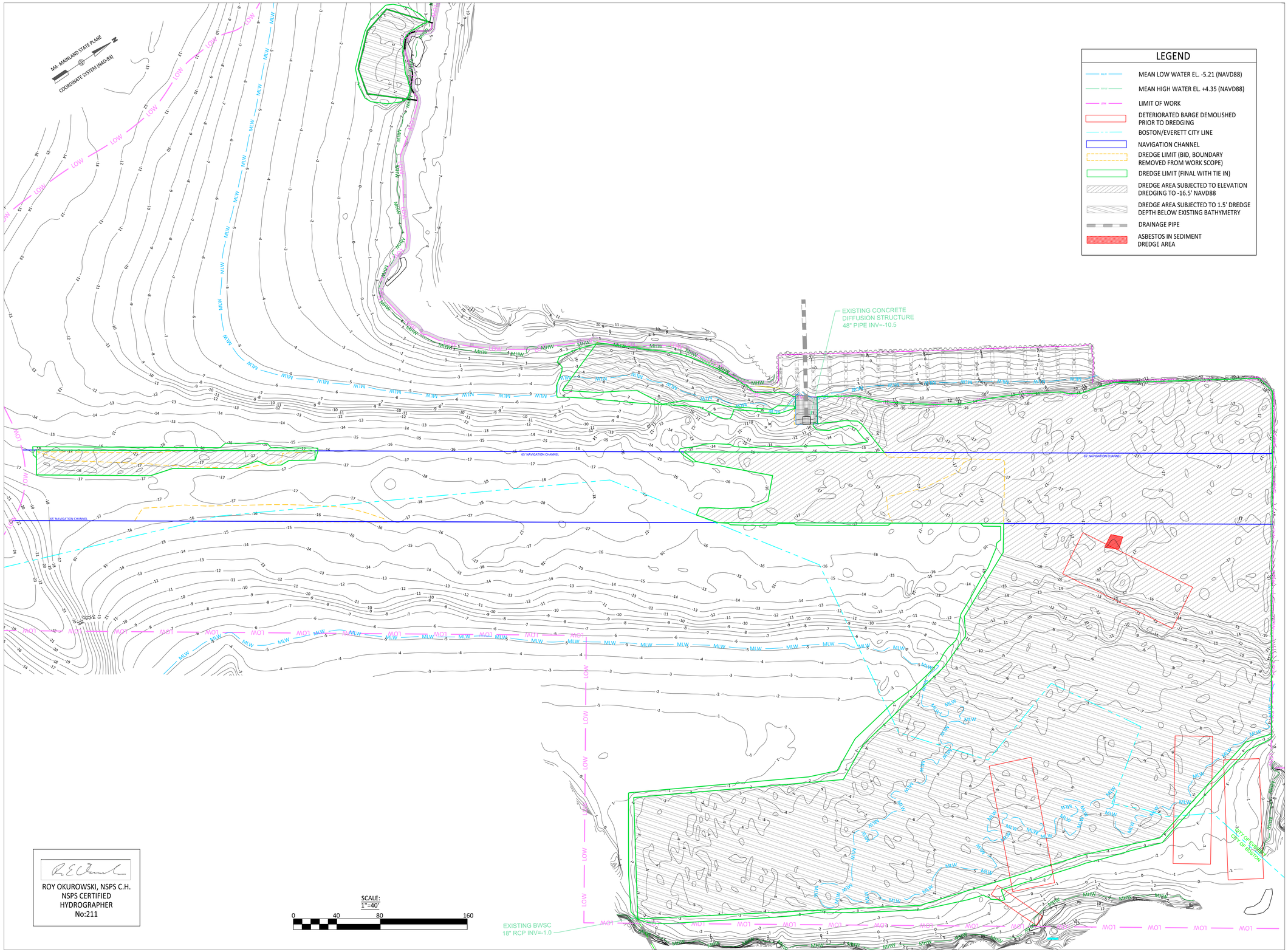
REVISIONS:

| NO: | DATE: | REVISION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| | |
|---|---|
| Date: 10/6/17 | Scale: 1"=50' |
| Drawn By: KT | Chk'd By: ES |
| Project: CHARTER_WYNN_2017 | |
| Sheet Number: 3 of 3 | |

# APPENDIX E

Record Drawings




## LEGEND

- MEAN LOW WATER EL. -5.21 (NAVD88)
- MEAN HIGH WATER EL. +4.35 (NAVD88)
- LIMIT OF WORK
- DETERIORATED BARGE DEMOLISHED PRIOR TO DREDGING
- BOSTON/EVERETT CITY LINE
- NAVIGATION CHANNEL
- DREDGE LIMIT (BID, BOUNDARY REMOVED FROM WORK SCOPE)
- DREDGE LIMIT (FINAL WITH TIE IN)
- DREDGE AREA SUBJECTED TO ELEVATION DREDGING TO -16.5' NAVD88
- DREDGE AREA SUBJECTED TO 1.5' DREDGE DEPTH BELOW EXISTING BATHYMETRY
- DRAINAGE PIPE
- ASBESTOS IN SEDIMENT DREDGE AREA

GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS OF COMBINED PROGRESS SURVEY DATA COMPRISING OF 1/22/18 THROUGH THE INITIAL BEFORE DREDGE SURVEY PERFORMED ON 10/4/17, AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. SOUNDING DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, A R2 SONIC 2024 200 KHZ MULTI-BEAM SONAR, TOPOGRAPHIC DATA COLLECTED WITH A MERLIN TOPOGRAPHIC LASER, TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH BASE STATION CORRECTIONS, CODA F175 IMU, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. CONTOURS GENERATED FROM 3X3 AVERAGE SOUNDINGS, DEPTH BELOW NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD(88).

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. PROJECT BENCHMARK IS POINT "1215" DRILL HOLE IN CONCRETE, ELEV: 10.07' NAVD(88).

6. ALL BACKGROUND FILES, INCLUDING PROPERTY LINES, WORK LIMIT, SITE BASE MAP AND FEATURES PROVIDED BY CHARTER CONTRACTING.

# WYNN BOSTON HARBOR SEDIMENT REMEDIATION

# POST-DREDGE COMBINED SURVEY CONTOURS

PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118

STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net

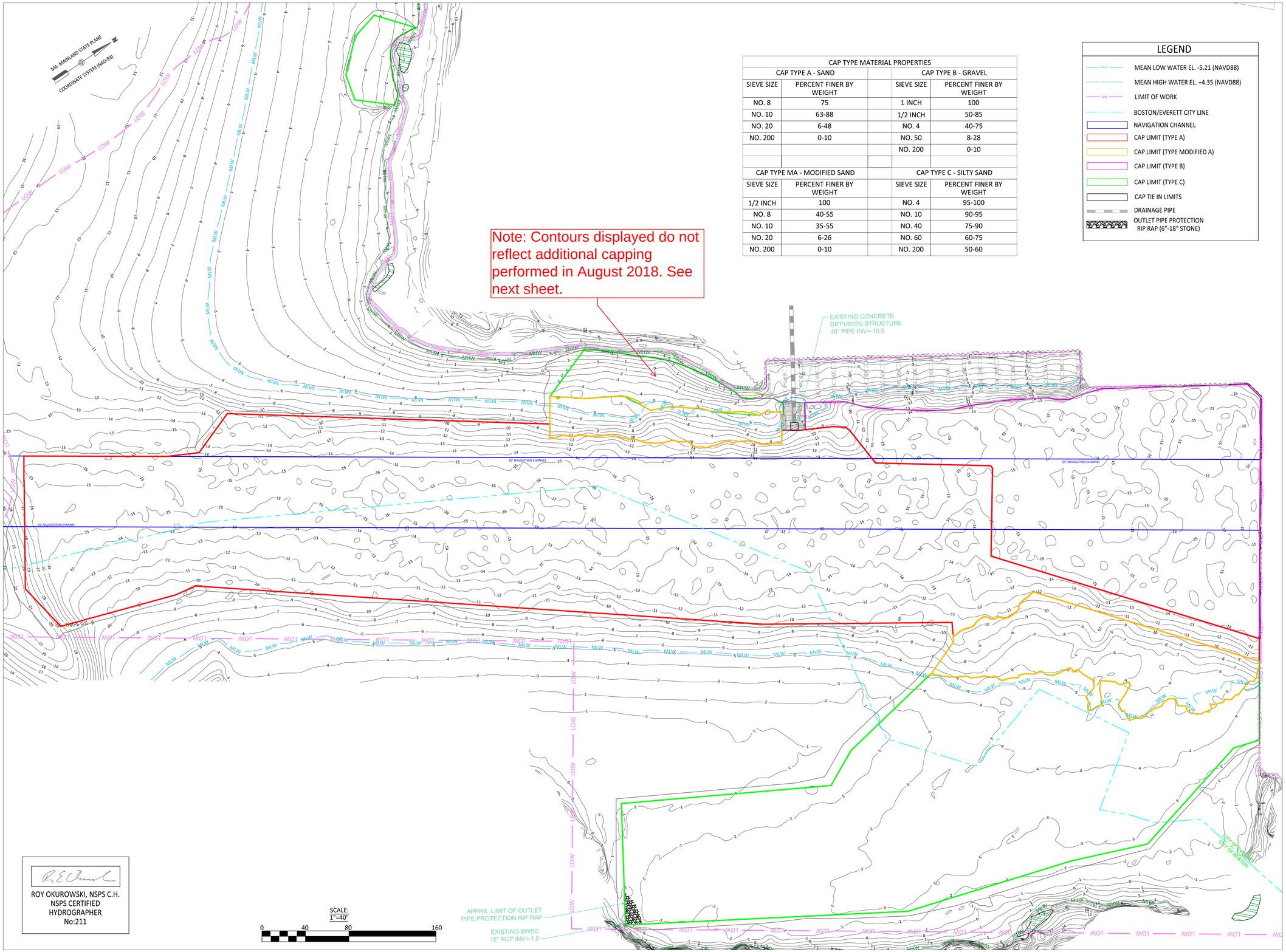
REVISIONS:

| NO: | DATE: | REVISION: |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

| | |
|---|---|
| Date: 1/22/18 | Scale: 1"=40' |
| Drawn By: KT | Chk'd By: ES |
| Project: CHARTER_WYNN_2017 | |
| Sheet Number: 1 of 1 | |

ROY OKUROWSKI, NSPS C.H.
NSPS CERTIFIED
HYDROGRAPHER
No:211

SCALE:
1"=40'
0 40 80 160




| CAP TYPE MATERIAL PROPERTIES | | | | |
|---|---|---|---|---|
| CAP TYPE A - SAND | | | CAP TYPE B - GRAVEL | |
| SIEVE SIZE | PERCENT FINER BY WEIGHT | | SIEVE SIZE | PERCENT FINER BY WEIGHT |
| NO. 8 | 75 | | 1 INCH | 100 |
| NO. 10 | 63-88 | | 1/2 INCH | 50-85 |
| NO. 20 | 6-48 | | NO. 4 | 40-75 |
| NO. 200 | 0-10 | | NO. 50 | 8-28 |
| | | | NO. 200 | 0-10 |
| | | | | |
| CAP TYPE MA - MODIFIED SAND | | | CAP TYPE C - SILTY SAND | |
| SIEVE SIZE | PERCENT FINER BY WEIGHT | | SIEVE SIZE | PERCENT FINER BY WEIGHT |
| 1/2 INCH | 100 | | NO. 4 | 95-100 |
| NO. 8 | 40-55 | | NO. 10 | 90-95 |
| NO. 10 | 35-55 | | NO. 40 | 75-90 |
| NO. 20 | 6-26 | | NO. 60 | 60-75 |
| NO. 200 | 0-10 | | NO. 200 | 50-60 |

## LEGEND

- MEAN LOW WATER EL. -5.21 (NAVD88)
- MEAN HIGH WATER EL. +4.35 (NAVD88)
- LIMIT OF WORK
- BOSTON/EVERETT CITY LINE
- NAVIGATION CHANNEL
- CAP LIMIT (TYPE A)
- CAP LIMIT (TYPE MODIFIED A)
- CAP LIMIT (TYPE B)
- CAP LIMIT (TYPE C)
- CAP TIE IN LIMITS
- DRAINAGE PIPE
- OUTLET PIPE PROTECTION RIP RAP (6"-18" STONE)

GENERAL NOTES

1. THIS HYDROGRAPHIC SURVEY REPRESENTS CONDITIONS OF COMBINED PROGRESS SURVEY DATA COMPRISING OF 2/13/18-3/20/18, AND MAY NOT BE REPRESENTATIVE OF CONDITIONS ON OTHER DATES.

2. THIS HYDROGRAPHIC SURVEY IS INTENDED FOR USE ON THIS PROJECT ONLY, AND IS NOT INTENDED FOR ANY OTHER PROJECT OR PURPOSE WITHOUT WRITTEN PERMISSION FROM STEELE ASSOCIATES.

3. SOUNDING DATA WAS COLLECTED USING SURVEY VESSEL HAYDEN JANE, A R2 SONIC 2024 200 KHZ MULTI-BEAM SONAR, TOPOGRAPHIC DATA COLLECTED WITH A MERLIN TOPOGRAPHIC LASER, TRIMBLE SPS855 RTK GPS POSITIONING SYSTEM WITH BASE STATION CORRECTIONS, CODA F175 IMU, AND HYPACK 2015 FOR DATA ACQUISITION AND PROCESSING.

4. CONTOURS GENERATED FROM 3X3 AVERAGE SOUNDINGS, DEPTH BELOW NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD(88).

5. THE COORDINATE SYSTEM IS THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM, DATUM: NAD-83, UNITS: US SURVEY FEET. PROJECT BENCHMARK IS POINT "1215" DRILL HOLE IN CONCRETE, ELEV: 10.07' NAVD(88).

6. ALL BACKGROUND FILES, INCLUDING PROPERTY LINES, WORK LIMIT, SITE BASE MAP AND FEATURES PROVIDED BY CHARTER CONTRACTING.

# WYNN BOSTON HARBOR SEDIMENT REMEDIATION

# FINAL CAP SURVEY CONTOURS

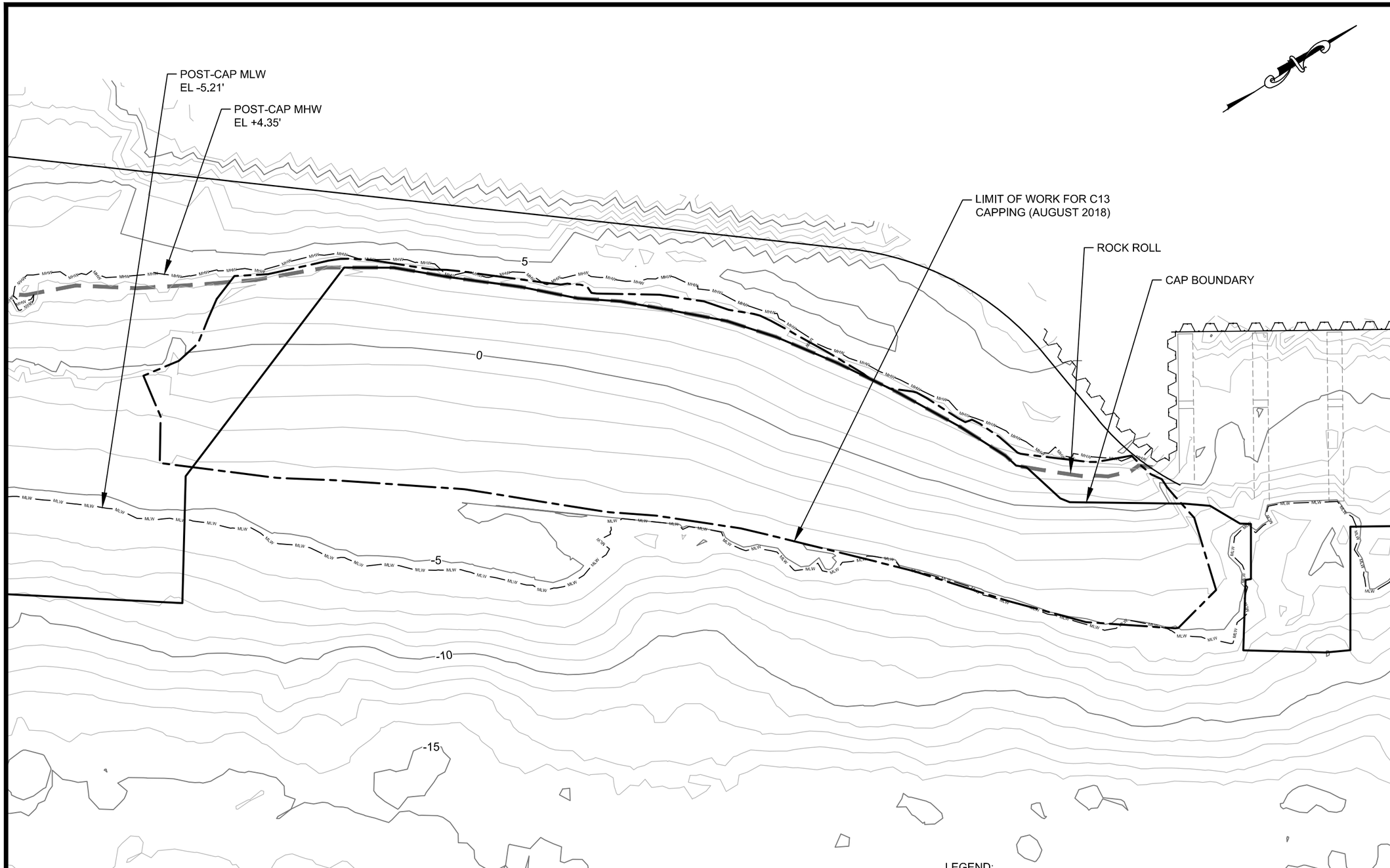
PREPARED FOR:
CHARTER
500 HARRISON AVE., SUITE 4R
BOSTON, MA 02118


STEELE ASSOCIATES
MARINE CONSULTANTS, LLC.
94 Gifford Street
Falmouth, MA 02540
Phone: 508 540-0001
Fax: 508 374-0405
info@steeleassociates.net


ROY OKUROWSKI, NSPS C.H.
NSPS CERTIFIED
HYDROGRAPHER
No:211

| REVISIONS: | | |
|---|---|---|
| NO: | DATE: | REVISION: |
| | | |
| | | |
| | | |
| | | |

| | |
|---|---|
| Date: 3/20/18 | Scale: 1"=40' |
| Drawn By: KT | Chk'd By: ES |
| Project: CHARTER_WYNN_2017 | |
| Sheet Number: 1 of 1 | |




SOURCE:

SURVEY DATA INSIDE THE C13 LIMIT OF WORK COLLECTED BY FELDMAN SURVEYORS, DATED 8-9-2018. ALL SURVEY DATA OUTSIDE THE C13 LIMIT OF WORK COLLECTED BY CHARTER ENVIRONMENTAL, DATED 4-9-2018.

0' 10' 20' 30'

1" = 20'

LEGEND:

- MLW — MEAN LOW WATER (-5.21' NAVD88)
- MHW — MEAN HIGH WATER (+4.35' NAVD88)
- -10 — MAJOR CONTOUR WITH ELEVATION
- MINOR CONTOUR
- ROCK ROLL
- LIMIT OF WORK FOR C13 CAPPING (AUGUST 2018)
- CAP BOUNDARY

amec foster wheeler

AMEC MASSACHUSETTS, INC.
271 MILL ROAD
CHELMSFORD MASSACHUSETTS 01824
TELEPHONE: (978) 692-9090
FAX: (978) 692-6633
WEB: WWW.AMECFW.COM

CLIENT:

BOSTON HARBOR Encore

PROJECT:

ENCORE BOSTON HARBOR
SEDIMENT REMEDIATION

| REV | DATE | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |

ISSUE / REVISION:

| | |
|---|---|
| DESIGNED BY: DAA | DRAWN BY: BEG |
| CHECKED BY: MJG | DATE: AUG 2018 |
| SCALE: AS SHOWN | ISSUE / REVISION: 0 |

PROJECT NUMBER:
3651170065

TITLE:

C13 FINAL CAP
SURVEY CONTOURS
(NAVD88)

SHEET NUMBER:
1

# APPENDIX F

Asbestos-Impacted Sediment Dredging Documentation

ENVIRONMENTAL
HEALTH & ENGINEERING

Environmental Health
& Engineering, Inc.

117 Fourth Avenue
Needham, MA
02494-2725

TEL 800-825-5343
781-247-4300
FAX 781-247-4305

www.eheinc.com

November 6, 2017

Massachusetts Department of Environmental Protection
Northeast Regional Office, Asbestos Section
205B Lowell Street
Wilmington, MA 01887

**RE: Non-Traditional Asbestos Abatement Work Plan— Wynn Boston Harbor Sediment Disposal (EH&E 21802)**

To Whom It May Concern:

On behalf of Wynn MA, LLC, Environmental Health & Engineering, Inc. (EH&E) prepared this non-traditional asbestos abatement work plan (NT Plan) describing the measures to be implemented for bulk loading, packaging, transport, and offsite disposal of sediment that is an asbestos-contaminated waste material (ACWM) at the Wynn Boston Harbor development project (the Project) located at 1 Horizon Way in Everett, Massachusetts. Project activities are also subject to the provisions of the Phase IV Remedy Implementation Plan for RTN 3-0013341.

## 1) DOCUMENTATION AND RESPONSIBILITIES

Massachusetts Department of Environmental Protection (MassDEP) Form AQ 36 *Application for Non-Traditional Asbestos Abatement Work Practice Approval* is being submitted with this plan along with the $600 fee (copies in Appendix A). After approval of this NT Plan, the contractor will file Asbestos Notification Form ANF-001 to the MassDEP Northeastern Regional Office (NERO) Asbestos Program. The following entities have responsibility under this plan:

- Charter Contracting Company, LLC. (Charter), who is a Massachusetts licensed asbestos abatement contractor, will perform all asbestos-related work under this NT Plan, including hauling the waste to the disposal facility. Charter is subcontracted to SPS New England, Inc.

- Massachusetts licensed asbestos project monitors from LBP Solutions, LLC (LBP) will provide perimeter air sampling and visual inspections required by this plan.

- The disposal facility will be Waste Management Turnkey (Rochester, New Hampshire) or Waste Management Crossroads Landfill (Norridgewock, Maine).

## 2) MATERIALS MANAGED

The volume of ACWM to be handled under this NT Plan is 25 cubic yards (CY) and consists of sediment containing less than 1% asbestos. Charter performed precharacterization sampling in locations of the site where sediment removal was planned for the Project, including collecting samples for asbestos analysis in 84 locations shown in the first figure of Appendix B. No asbestos was detected in any of these samples, except one from Grid 46, which had a result of <1% asbestos. Charter subsequently sampled sediment corresponding to a volume of 25 CY to the depth of planned dredging at four locations around the <1% asbestos sample as shown in the second figure in Appendix B. No asbestos was detected in any of the four delineation samples. Sediment within the bounds of these four samples is assumed to be ACWM and will be disposed of under this NT Plan. All asbestos in sediment laboratory results are included in Appendix C.

## 3) SEQUENCE OF WORK

All ACWM activities will occur on a deck barge at the dredging site for the Project shown in Appendix D. All ACWM sediment will be disposed of offsite in accordance with this NT Plan; with any additional conditions required in the MassDEP approval of this NT Plan; with packaging, transport, storage, disposal, and waste shipment record requirements for ACWMs outlined in 310 CMR 7.15 (15-18); and with other applicable federal, state, and local requirements. All work will also be conducted in accordance with the contractor's site-specific health and safety plan (HASP). The sequence of work will be:

- Prepare deck barge with perimeter berm covered with polyethylene sheeting or an equivalent impervious material.

- Restrict access to contractor personnel who are appropriately trained and qualified in accordance with the contractor HASP.

- As detailed in Section 4, the following will occur on the deck barge:

  - Excavate the ACWM sediment directly into leak-tight dewatering boxes.
  - Dewater the sediment in the boxes through 5-micron filters.
  - If needed, amend sediment that cannot be dewatered enough with Portland cement to meet disposal facility requirements.

- Implement dust control measures in accordance with Section 5.

- After dewatering, package, transport, and dispose of ACWM in accordance with Section 6.

- Decontaminate equipment and dewatering boxes on the barge in accordance with Section 7.

- Collect perimeter air samples around all sediment excavation, cement mixing, and dewatering box decontamination operations in accordance with Section 8.

- Stop work in the applicable work zone and notify MassDEP immediately if ACWM work activities generate visible dust or if monitoring results meet or exceed the airborne fiber levels described in Section 8 below.

- Following work, inspect areas in accordance with the completion criteria in Section 9.

## 4) SEDIMENT EXCAVATION AND DEWATERING

The contractor will excavate the specified ACWM with a mechanical dredge equipped with an environmental clam bucket. In addition to the mechanical dredge plant, a barge based water treatment system, a push boat, and deck barge with leak-tight dewatering boxes will be onsite to support the dredge. All dredging will be conducted in a permeable turbidity curtain and sorbent boom. The location and layout of the deck barge is shown in Appendix E.

The deck barge will have a perimeter berm and be covered with polyethylene sheeting or an equivalent impervious material on the deck below prior to the boxes being filled with sediment. The sediment will be excavated into leak-tight 25 CY dewatering boxes with dimensions of a standard roll-off, lined with 400-micron filter fabric detailed in Appendix F. Although it is expected that two dewatering boxes will be adequate, up to five boxes will be available if additional capacity is needed, depending on the moisture content of the sediment.

The dredge will place each bucket of sediment directly into the dewatering boxes, which will be immediately closed after being filled and fully water-tight. As each box is filled, pumping systems will be attached to drains on each box to send the liquid through a dedicated 5-micron filter system on the deck barge. After passing through the 5-micron filter, the water will travel to the full water treatment system detailed in Appendix G to ultimately be discharged within the turbidity curtain onsite.

All ACWM must be free of standing water and pass a paint filter test prior to offsite disposal. Although it is expected that the dewatering boxes will be effective enough, sediment that cannot be drained of free-standing liquid will be amended to meet the requirements of the disposal facility. To achieve these results, Portland cement will be mixed into the dewatering boxes on the deck barge. An excavator with a mixing head will be utilized to mix the cement into each box. After mixing, each box will be closed while the cement cures for approximately 24 hours. Once acceptable for transport and disposal, the boxes will be packaged, transported and disposed in accordance with Section 6. Additionally, all PPE, liners, filter bags, polyethylene sheeting, and other contaminated materials will be disposed as ACWM with the sediment.

## 5) DUST CONTROL

Dust control will be implemented by the contractor during all ACWM operations. Visible dust emissions from ACWM work will not be allowed. The contractor will provide necessary measures to control the generation of dust from activities and to prevent visible dust emissions. Dust suppression techniques such as wetting, misting, and ensuring the material is damp will be employed as necessary to control dust levels. While being dewatered, each ACWM box will be designated as containing ACWM and maintained closed and sealed.

Work will be temporarily halted, MassDEP will be notified immediately, and dust suppression techniques will be modified or enhanced if onsite ACWM work activities generate visible dust. Visible emissions from non-suspect sources such as vehicle exhausts, dust from uncontaminated construction areas, pollen, etc. will not be considered cause for work stoppage.

## 6) PACKAGING, TRANSPORT, AND DISPOSAL

After being filled to acceptable load capacity, dewatered, and in an acceptable condition for the disposal facility, the contractor will clean exterior surfaces of the sealed dewatering boxes and the deck barge, if needed, until they are visually clean. LBP will visually inspect the work area and boxes in accordance with Section 9. The barge will then be taken to the bulkhead site shown in Appendix D and the boxes will be transported to the disposal facility.

A DOT licensed hauler will transport and dispose of the waste at a landfill permitted to accept asbestos waste. The trucks used for the transport of ACWM must be in good condition. Each truck will display the orange placard indicating the transport of asbestos-containing materials (Special Waste). With each shipment of waste, the contractor will complete a waste shipment record (WSR) with all information required by 40 CFR 61.149 and 310 CMR 7.15(18). All packaged waste materials will include warning labels, waste generator labels, and waste shipment records with all information required by MassDEP, U.S. Environmental Protection Agency (EPA), U.S. Occupational Health and Safety Administration (OSHA), and U.S. Department of Transportation (DOT). Class 9 placards (2212) shall be affixed to all exterior sides of each box while onsite, and must remain affixed to the dumpster until the ACWM has been removed from the bin at the receiving facility. Labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible.

The contractor will dispose of all ACWM generated during the Project in a landfill permitted to accept ACWM. The facility will be Waste Management Turnkey Landfill (Rochester, New Hampshire) or Waste Management Crossroads Landfill (Norridgewock, Maine). The contractor will provide the owner with Waste Shipment Records within 30 days following waste disposal. The contractor shall also submit copies of WSRs to MassDEP NERO on a daily basis via NERO.asbestos@state.ma.us.

After the ACWM is dumped at the disposal facility, the boxes will be closed/sealed and transported back to the Wynn site for decontamination as discussed below.

## 7) DECONTAMINATION

Each piece of equipment that contacts ACWM will be decontaminated on the deck barge by washing with water. All decontamination water will be treated through a 5-micron filter and full treatment system. The following will be decontaminated prior to use on other parts of the site:

- Dredge bucket
- Filter skid (filters themselves will be disposed of as ACWM waste)
- Mixing head

The sealed/closed dewatering boxes will be returned to the site and be decontaminated. The boxes will be decontaminated by washing with water on the deck barge, with wash water collected and treated through the 5-micron filter and full treatment system.

## 8) PERIMETER ASBESTOS MONITORING

LBP will collect air samples around the perimeter of each active ACWM zone, including during excavation, mixing with Portland cement (if needed), and dewatering box decontamination:

- Area air samples will be collected in at least four locations around each ACWM operation. High flow pumps will be used to collect air samples with sufficient air volumes to achieve detection limits below 0.010 fibers per cubic centimeter (f/cc). During full workdays, two sets of samples will be collected around each location: one set for approximately half of the workday (morning) and a second set for the remainder of the workday (afternoon).

- Samples will be analyzed for total airborne fibers, using Phase Contrast Microscopy (PCM) on an immediate basis. Results from the first set of samples will be available quickly enough that corrective actions, if warranted, can be implemented the same workday. Results from the second set will be available such that corrective actions, if warranted, can be implemented by the morning of the next workday.

- Any individual perimeter air sampling result that meets or exceeds 0.010 f/cc potentially related to Project ACWM work will result in immediate:

  - Stoppage of ACWM work in the applicable work zone,
  - Notification to the MassDEP NERO Asbestos Program, and
  - Reevaluation and improvement of work practices, engineering controls, and dust/fiber suppression methods, if warranted.

- Air sampling results will also be provided on a daily basis to the MassDEP NERO Asbestos Program at NERO.asbestos@state.ma.us.

- Air samples will be collected and analyzed onsite by LBP using PCM in accordance with National Institute for Occupational Safety and Health (NIOSH) Method 7400.

## 9) COMPLETION CRITERIA AND FINAL INSPECTIONS

Visual inspection will be used to evaluate completion of NT Plan activities for the Project. LBP representatives will inspect each work area and deem ACWM operations complete when:

- All ACWMs covered by the plan have been removed.

- All equipment has been adequately decontaminated in accordance with this NT Plan and is visually clean and free of ACWMs.

- Exterior surfaces of the dewatering boxes and the deck barge are visually clean and free of ACWMs before being removed from the barge for transport to the disposal facility.

- Exterior surfaces of the dewatering boxes, interior surfaces of the dewatering boxes, and the deck barge are visually clean and free of ACWMs after being decontaminated.

- All work areas are visibly clean and free of ACWMs.

If you have any questions, please feel free to contact us at 1-800-TALK-EHE (1-800-825-5343).

Sincerely,

Adam S. Bisol
Massachusetts Licensed
Asbestos Designer AD034163

William S. Wade, C.I.H.
Senior Scientist/Project Manager

Appendix A BWP AQ 36 Application and Copies of Payment and Transmittals
Appendix B Sample Locations and Locations of Asbestos Contaminated Sediment
Appendix C Asbestos Laboratory Test Results
Appendix D Site Locus Plan
Appendix E Site Operation Plans
Appendix F Dewatering Box Details
Appendix G Water Treatment System Description

cc: John MacAuley, Asbestos Enforcement Section Chief, MassDEP NERO [via email]
Andrew Clark, MassDEP NERO [via email]
Matthew Grove, LSP, Senior Project Manager, AMEC Foster Wheeler [via email]
Natalie Brown, Wynn Design and Development [via email]
Chris Gordon, Wynn Design and Development [via email]

# APPENDIX A
# BWP AQ 36 APPLICATION AND COPIES OF PAYMENT AND TRANSMITTALS

# Massachusetts Department of Environmental Protection
## Bureau of Waste Prevention
BWP AQ 36 Application for Non-Traditional Asbestos Abatement Work Practice Approval

## A. Work Site Information

**Important:** When completing forms on a computer, use only the tab key to move your cursor - do not use the return key.

**Facility**

Wynn Boston Harbor
Facility Name or Site Description

1 Horizon Way
Facility Address

| Everett | MA | 02149 |
|---|---|---|
| City/Town | State | ZIP Code |

**Owner**

Wynn MA LLC
Owner Name

101 Station Landing, Suite 2200
Owner Address

| Medford | MA | 02155 |
|---|---|---|
| City/Town | State | ZIP Code |

| 857-770-7000 | |
|---|---|
| Telephone Number | Email Address |

**Applicant** - ☒ Check here if same as Owner and skip to next section. Otherwise, complete fields below.

Applicant Name

Applicant Address

| City/Town | State | ZIP Code |
|---|---|---|

| Telephone Number | Email Address |
|---|---|

## B. Project Information

**Asbestos Abatement Project Designer**

| Adam S. Bisol | AD 034163 |
|---|---|
| Name | Department of Labor Standards (DLS) Project Designer Cert. Number |

Environmental Helath and Engineering, 117 Fourth Avenue
Address

| Needham | MA | 02494 |
|---|---|---|
| City/Town | State | ZIP Code |

| 781-247-4300 | abisol@eheinc.com |
|---|---|
| Telephone Number | Email Address |

**Asbestos Abatement Contractor**

| Charter Contracting Company, LLC | AC 000877 |
|---|---|
| Contractor Name | Department of Labor Standards (DLS) Contractor License Number |

500 Harrison Avenue, Suite 4R
Address

| Boston | MA | 02118 |
|---|---|---|
| City/Town | State | ZIP Code |

| 857-246-6800 | |
|---|---|
| Telephone Number | Email Address |

# Massachusetts Department of Environmental Protection
## Bureau of Waste Prevention
BWP AQ 36 Application for Non-Traditional Asbestos Abatement Work Practice Approval

## B. Project Information (continued)

**Demolition Contractor** (If Applicable)

Contractor Name

Address

City/Town | State | ZIP Code

Telephone Number | Email Address

**Circumstances** – Check the appropriate box(es) to indicate why a Non-Traditional Asbestos Abatement Work Practice Approval is needed.

☐ Facility is being demolished under a state or local government order because it is structurally unsound and in danger of imminent collapse. (Please attach a copy of the order to your work plan proposal.)

☐ Asbestos Containing Material (ACM) or Asbestos Containing Waste Material (ACWM) was not accessible for testing, therefore not discovered until after demolition began and, as a result of the demoltion, cannot be safely removed.

☐ Abatement activity is being conducted as part of an emergency renovation operation.

☐ Asbestos abatement activity is being conducted to clean up and decontaminate a facility or portion of a facility where:

- ☐ Previous asbestos abatement activities were not conducted in compliance with 310 CMR 7.15, or
- ☐ ACM deterioration, if not immediately attended to, would present a safety or public health hazard.

☐ Wetting during a facility renovation would unavoidably damage equipment or present a safety hazard.

☒ The project requires bulk loading of ACM and/or ACWM.

List the requirements of 310 CMR 7.15 that you are unable to comply with and explain why:

Asbestos contaminated sediment will be bulk loaded for offsite disposal. Please see atatched Non-Traditional Asbestos Abatement Work Plan

**Other Project Details**

Project Start Date: 11/10/2017 (MM/DD/YYYY) | Project End Date: 11/20/2017 (MM/DD/YYYY)

Types & Amounts of ACM and/or ACWM Requiring Non-Traditional Asbestos Abatement Work Practice(s):

☒ Friable: 25 CY (Quantity in Cubic Meters (Cubic Yards)) | ☐ Non-Friable: (Quantity in Cubic Meters (Cubic Yards))

Location(s) of ACM in the Facility:

Asbestos contaminated sediment

# Massachusetts Department of Environmental Protection
## Bureau of Waste Prevention
BWP AQ 36 Application for Non-Traditional Asbestos Abatement Work Practice Approval

## C. Certification

"I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment. I am aware that this permit application or notification shall not be deemed valid unless payment of the applicable fee is made."

Signature

Robert DeSalvio
Printed Name

President
Title

11/3/2017
Date (MM/DD/YYYY)

## D. Submission of Application

**Note:** MassDEP review will begin only after your submissions have been received at both locations.

**STEP 1: Submit Application**

Send the following materials to the appropriate MassDEP Regional Office*, Attention: Asbestos Section:

☒ This original completed and signed form.

☒ A copy of the check or money order from Step 1.

☒ Your proposed work plan, describing work practices, duration and schedule. The proposal must:
- Include signature of the Asbestos Project Designer who prepared it.
- Demonstrate that the deviations from 310 CMR 7.15 and alternatives proposed will not cause any visible emissions to the outside air or pose significant risk to public health, safety or the environment.

☒ All supporting documentation.

*Find the MassDEP Regional Office for the community where this work will be done: http://www.mass.gov/eea/agencies/massdep/about/contacts/

**STEP 2: Submit Fee Payment**

Send the materials below to this address:

MassDEP
P.O. Box 4062
Boston, MA 02211

☒ A copy of this completed and signed form.

☒ Fee payment of $600* (check or money order payable to "Commonwealth of Massachusetts").

*The following entities are exempt from this fee:
- Cities, towns, counties or districts of the Commonwealth
- Federally recognized Indian tribe housing authorities
- Municipal housing authorities
- The Massachusetts Bay Transportation Authority (MBTA)

Is this a fee-exempt project? ☐ Yes ☒ No

NOTE: Entities that are exempt from the fee must still submit a copy of this completed and signed form, without payment, to the P.O. box above.

40832

**ENVIRONMENTAL HEALTH & ENGINEERING, INC.**
117 FOURTH AVENUE
NEEDHAM, MA 02494

**CITIZENS BANK**
5-7017/2110

CHECK DATE October 25, 2017

Security features. Details on back.

PAY Six Hundred and 00/100 Dollars

TO Commonwealth of Massachusetts

AMOUNT 600.00

**OVER $10,000.00 TWO SIGNATURES REQUIRED**

AUTHORIZED SIGNATURE

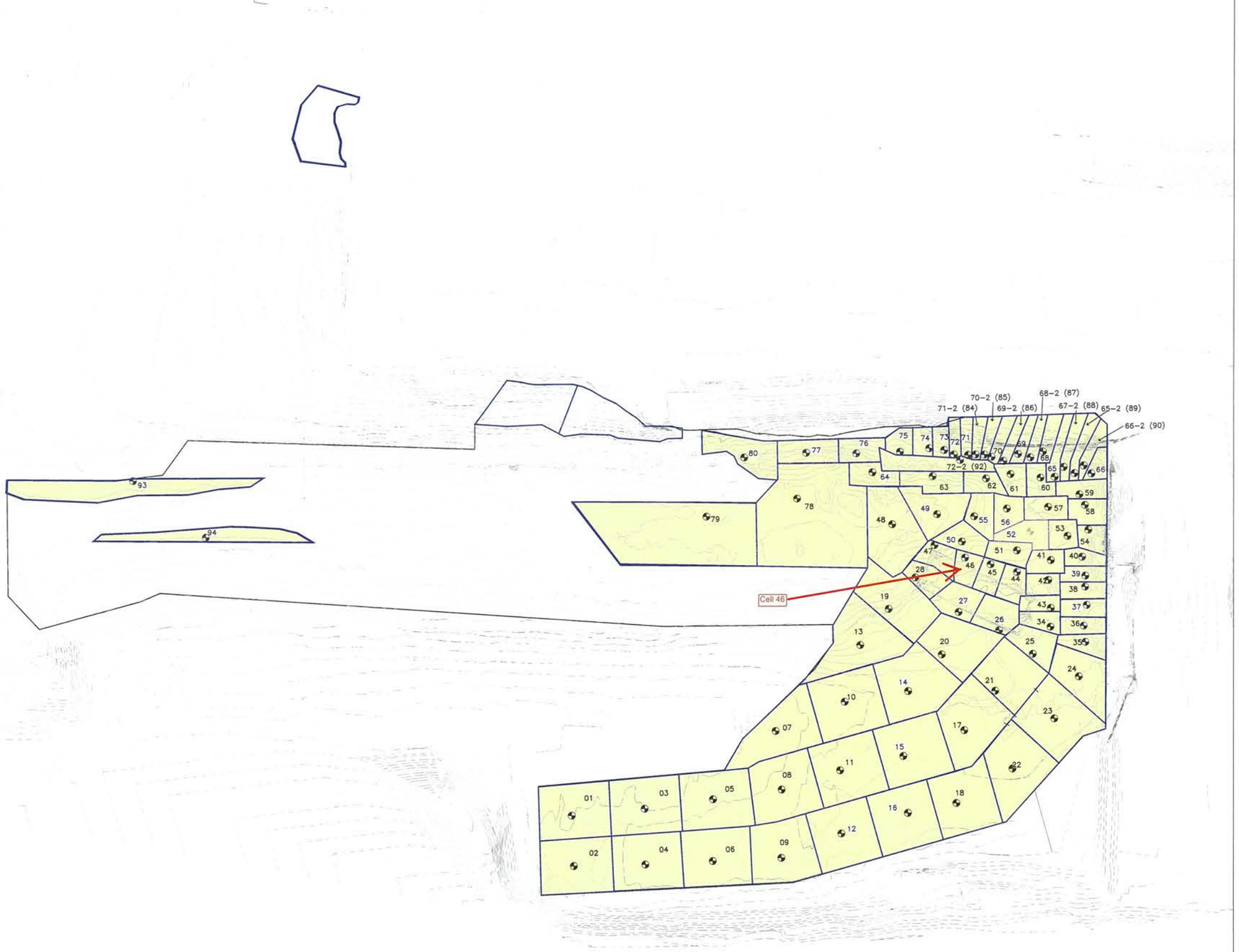
⑈040832⑈ ⑆211070175⑆ 1107819013⑈

**ENVIRONMENTAL HEALTH & ENGINEERING, INC.** 40832

Check Date: 10/25/2017

| Invoice Number | Date | Voucher | Amount | Discounts | Previous Pay | Net Amount |
|---|---|---|---|---|---|---|
| 102517 | 10/25/2017 | 000000068646 | 600.00 | | | 600.00 |
| Commonwealth of Massachusetts | | TOTAL | 600.00 | | | 600.00 |
| Cash - Operating Citizens | 1 | COMDEP | | | | |

# APPENDIX B
# SAMPLE LOCATIONS AND LOCATIONS OF ASBESTOS CONTAMINATED SEDIMENT




LEGEND

SEDIMENT CELL AREA

SEDIMENT CORE LOCATION

NOTES:

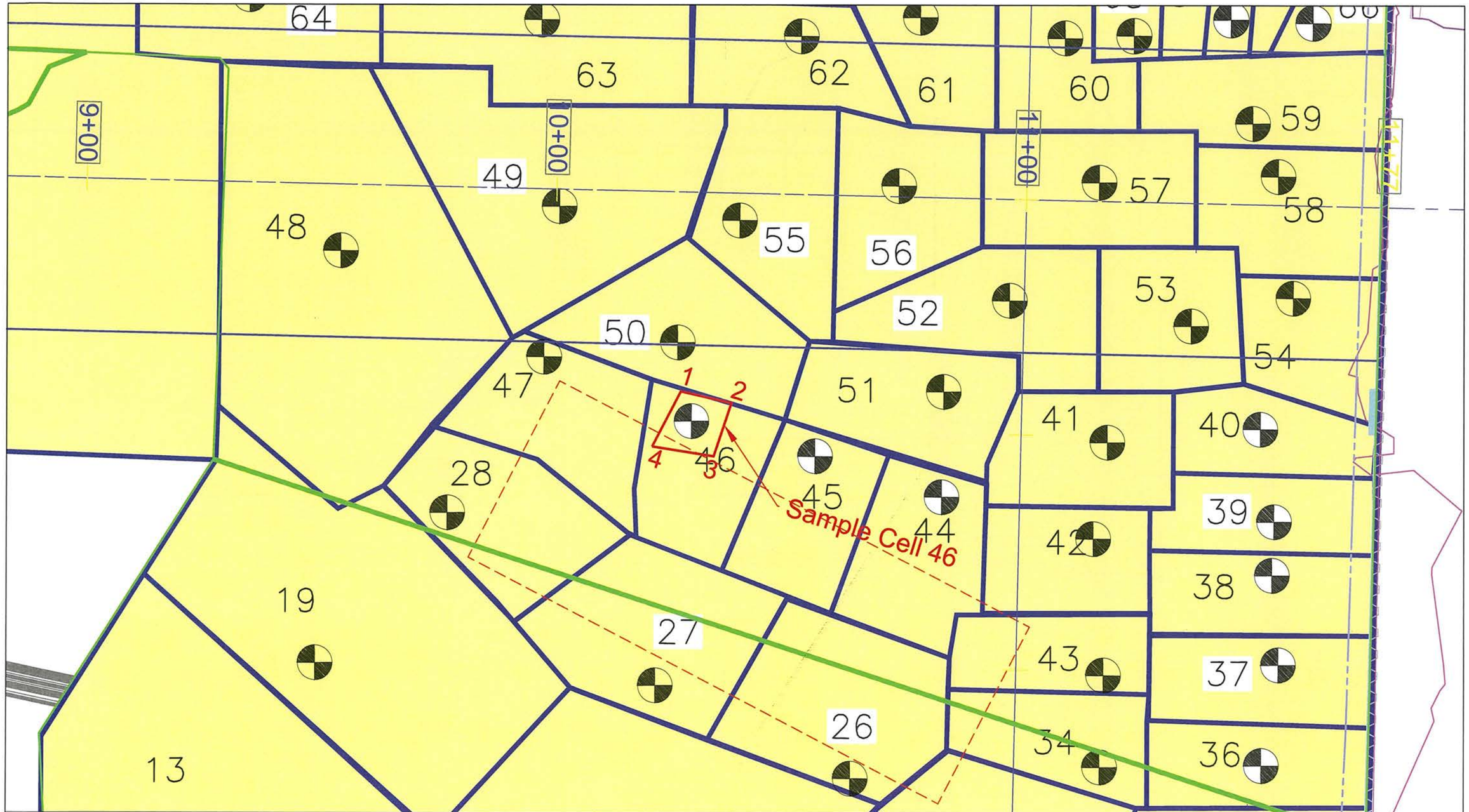
1. CHARTER SEPTEMBER 2017 SURVEY INCLUDED FOR MAIN CHANNEL – REMAINING AREAS SHOWN FROM DIGITIZED AMEC DRAWING SHEET C-102.
2. EACH SEDIMENT CORE LOCATION REPRESENTS 500 TONS OF SEDIMENT.

FIGURE 1
CHARTER CONTRACTING COMPANY, LLC
WYNN EVERETT

PRE-CHARACTERIZATION
SAMPLING GRID PLAN

SEPTEMBER 2017 SCALE: 1" = 50'

Weston & Sampson




## LEGEND

| Corner Label | Cell 46 Smple Locations |
|---|---|
| 1 | X=772273.84 Y=2968894.67 |
| 2 | X=772281.78 Y=2968902.36 |
| 3 | X=772289.23 Y=2968893.04 |
| 4 | X=772280.35 Y=2968883.17 |

GRAPHIC SCALE

50 0 25 50 100 200

( IN FEET )
1 inch = 50 ft.

REVISIONS

| DESCRIPTION | DATE |
|---|---|
| | |


CHARTER CONTRACTING
500 Harrison Ave, Boston MA 02118
ENVIRONMENTAL ENGINEERING SERVICES
Phone: 857 246-6800 Fax: 857 246-6885


PROJECT
Wynn Casino Dredge Remediation
Mystic River, Everett, MA

TITLE/SURVEY TITLE
Cell 46 Coring Locations

SCALE: 1:20
DATE: October 31 2016
DPS JOB NO: 454
USACE JOB NO:
FILE NAME: Harrison Cove Digging Trends.dwg
DESIGNED BY: T. LEWIS
APPROVED BY: T. LEWIS

PAGE
01

01

# APPENDIX C
# ASBESTOS LABORATORY TEST RESULTS

September 27, 2017

AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CLIENT PROJECT:** Wynn Sediment Remediation; 3651170065
**CEI LAB CODE:** A17-13718

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on September 27, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

# ASBESTOS ANALYTICAL REPORT
# By: Polarized Light Microscopy

**Prepared for**

## AMEC Foster Wheeler

CLIENT PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-13718

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 09/27/17

TOTAL SAMPLES ANALYZED: 84

# SAMPLES >1% ASBESTOS:

**TEL: 866-481-1412**

***www.ceilabs.com***

# Asbestos Report Summary

**By: POLARIZING LIGHT MICROSCOPY**

**PROJECT:** Wynn Sediment Remediation; 3651170065

**CEI LAB CODE:** A17-13718

**METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|---|---|---|---|---|---|
| SED-C-20 | | A2506497 | Gray | Soil | None Detected |
| SED-C-48 | | A2506498 | Black | Soil | None Detected |
| SED-C-25 | | A2506499 | Black | Soil | None Detected |
| SED-C-23 | | A2506500 | Gray | Soil | None Detected |
| SED-C-22 | | A2506501 | Gray | Soil | None Detected |
| SED-C-13 | | A2506502 | Gray | Soil | None Detected |
| SED-C-19 | | A2506503 | Gray | Soil | None Detected |
| SED-C-28 | | A2506504 | Gray | Soil | None Detected |
| SED-C-21 | | A2506505 | Gray | Soil | None Detected |
| SED-C-18 | | A2506506 | Gray | Soil | None Detected |
| SED-C-24 | | A2506507 | Gray | Soil | None Detected |
| SED-C-17 | | A2506508 | Gray | Soil | None Detected |
| SED-C-12 | | A2506509 | Gray | Soil | None Detected |
| SED-C-15 | | A2506510 | Gray | Soil | None Detected |
| SED-C-16 | | A2506511 | Gray | Soil | None Detected |
| SED-C-49 | | A2506512 | Gray | Soil | None Detected |
| SED-C-14 | | A2506513 | Gray | Soil | None Detected |
| SED-C-50 | | A2506514 | Gray | Soil | None Detected |
| SED-C-78 | | A2506515 | Black | Soil | None Detected |
| SED-C-79 | | A2506516 | Black | Soil | None Detected |
| SED-C-27 | | A2506517 | Gray | Soil | None Detected |
| SED-C-26 | | A2506518 | Gray | Soil | None Detected |
| SED-C-52 | | A2506519 | Gray | Soil | None Detected |
| SED-C-56 | | A2506520 | Black | Soil | None Detected |
| SED-C-55 | | A2506521 | Black | Soil | None Detected |
| SED-C-64 | | A2506522 | Gray | Soil | None Detected |
| SED-C-54 | | A2506523 | Black | Soil | None Detected |
| SED-C-53 | | A2506524 | Black | Soil | None Detected |
| SED-C-58 | | A2506525 | Gray | Soil | None Detected |
| SED-C-59 | | A2506526 | Gray | Soil | None Detected |
| SED-C-57 | | A2506527 | Gray | Soil | None Detected |

# Asbestos Report Summary

**By: POLARIZING LIGHT MICROSCOPY**

**PROJECT:** Wynn Sediment Remediation; 3651170065

**CEI LAB CODE:** A17-13718

**METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|---|---|---|---|---|---|
| SED-C-2 | | A2506528 | Gray | Soil | None Detected |
| SED-C-4 | | A2506529 | Gray | Soil | None Detected |
| SED-C-9 | | A2506530 | Gray | Soil | None Detected |
| SED-C-6 | | A2506531 | Gray | Soil | None Detected |
| SED-C-8 | | A2506532 | Gray | Soil | None Detected |
| SED-C-11 | | A2506533 | Gray | Soil | None Detected |
| SED-C-5 | | A2506534 | Gray | Soil | None Detected |
| SED-C-7 | | A2506535 | Gray | Soil | None Detected |
| SED-C-34 | | A2506536 | Gray | Soil | None Detected |
| SED-C-43 | | A2506537 | Gray | Soil | None Detected |
| SED-C-41 | | A2506538 | Gray | Soil | None Detected |
| SED-C-42 | | A2506539 | Gray | Soil | None Detected |
| SED-C-63 | | A2506540 | Black,Gray | Soil | None Detected |
| SED-C-61 | | A2506541 | Gray | Soil | None Detected |
| SED-C-62 | | A2506542 | Gray | Soil | None Detected |
| SED-C-60 | | A2506543 | Black,Gray | Soil | None Detected |
| SED-C-1 | | A2506544 | Gray | Soil | None Detected |
| SED-C-3 | | A2506545 | Gray | Soil | None Detected |
| SED-C-80 | | A2506546 | Gray,Black | Soil | None Detected |
| SED-C-44 | | A2506547 | Gray,Black | Soil | None Detected |
| SED-C-45 | | A2506548 | Gray,Black | Soil | None Detected |
| SED-C-47 | | A2506549 | Gray,Black | Soil | None Detected |
| SED-C-46 | | A2506550 | Gray,Black | Soil | Chrysotile <1% |
| SED-C-35 | | A2506551 | Gray,Black | Soil | None Detected |
| SED-C-37 | | A2506552 | Gray,Black | Soil | None Detected |
| SED-C-36 | | A2506553 | Gray,Black | Soil | None Detected |
| SED-C-66 | | A2506554 | Gray,Black | Soil | None Detected |
| SED-C-69 | | A2506555 | Gray,Black | Soil | None Detected |
| SED-C-68 | | A2506556 | Brown,Black | Soil | None Detected |
| SED-C-77 | | A2506557 | Gray | Soil | None Detected |
| SED-C-76 | | A2506558 | Gray,Black | Soil | None Detected |

# Asbestos Report Summary

**By: POLARIZING LIGHT MICROSCOPY**

**PROJECT:** Wynn Sediment Remediation; 3651170065

**CEI LAB CODE:** A17-13718

**METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|---|---|---|---|---|---|
| SED-C-75 | | A2506559 | Gray | Soil | None Detected |
| SED-C-74 | | A2506560 | Gray | Soil | None Detected |
| SED-C-73 | | A2506561 | Brown,Black | Soil | None Detected |
| SED-C-72 | | A2506562 | Gray,Black | Soil | None Detected |
| SED-C-93 | | A2506563 | Gray | Soil | None Detected |
| SED-C-94 | | A2506564 | Gray,Black | Soil | None Detected |
| SED-C-38 | | A2506565 | Gray,Black | Soil | None Detected |
| SED-C-65 | | A2506566 | Gray,Black | Soil | None Detected |
| SED-C-40 | | A2506567 | Gray | Soil | None Detected |
| SED-C-39 | | A2506568 | Gray | Soil | None Detected |
| SED-C-70 | | A2506569 | Brown,Black | Soil | None Detected |
| SED-C-71 | | A2506570 | Brown,Black | Soil | None Detected |
| SED-C-10 | | A2506571 | Black | Soil | None Detected |
| SED-C-72-2 | | A2506572 | Gray | Soil | None Detected |
| SED-C-70-2 | | A2506573 | Brown,Black | Soil | None Detected |
| SED-C-69-2 | | A2506574 | Black | Soil | None Detected |
| SED-C-71-2 | | A2506575 | Black | Soil | None Detected |
| SED-C-65-2 | | A2506576 | Black | Soil | None Detected |
| SED-C-68-2 | | A2506577 | Black | Soil | None Detected |
| SED-C-67-2 | | A2506578 | Black,Gray | Soil | None Detected |
| SED-C-66-2 | | A2506579 | Black,Gray | Soil | None Detected |
| SED-C-51 | | A2506580 | Black,Gray | Soil | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS Fibrous | | Non-Fibrous | | ASBESTOS % |
|---|---|---|---|---|---|---|---|
| **SED-C-20**<br>A2506497 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-48**<br>A2506498 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-25**<br>A2506499 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-23**<br>A2506500 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-22**<br>A2506501 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Talc | 95% | Soil | None Detected |
| **SED-C-13**<br>A2506502 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-19**<br>A2506503 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-28**<br>A2506504 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-21**<br>A2506505 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-18**<br>A2506506 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-24**<br>A2506507 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-17**<br>A2506508 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-12**<br>A2506509 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-15**<br>A2506510 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-16**<br>A2506511 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-49**<br>A2506512 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-14**<br>A2506513 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-50**<br>A2506514 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-78**<br>A2506515 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-79**<br>A2506516 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-27**<br>A2506517 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-26**<br>A2506518 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-52**<br>A2506519 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-56**<br>A2506520 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-55**<br>A2506521 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-64**<br>A2506522 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-54**<br>A2506523 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-53**<br>A2506524 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-58**<br>A2506525 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| Lab Notes: Samples A2506525-A2506552 analyzed by Anna Malmberg | | | | | | | |
| **SED-C-59**<br>A2506526 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-57**<br>A2506527 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-2**<br>A2506528 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-4**<br>A2506529 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-9**<br>A2506530 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-6**<br>A2506531 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS Fibrous | | Non-Fibrous | | ASBESTOS % |
|---|---|---|---|---|---|---|---|
| **SED-C-8**<br>A2506532 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-11**<br>A2506533 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-5**<br>A2506534 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-7**<br>A2506535 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-34**<br>A2506536 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-43**<br>A2506537 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-41**<br>A2506538 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS Fibrous | | Non-Fibrous | | ASBESTOS % |
|---|---|---|---|---|---|---|---|
| **SED-C-42**<br>A2506539 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-63**<br>A2506540 | Soil | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-61**<br>A2506541 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-62**<br>A2506542 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-60**<br>A2506543 | Soil | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-1**<br>A2506544 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-3**<br>A2506545 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-80**<br>A2506546 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-44**<br>A2506547 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-45**<br>A2506548 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-47**<br>A2506549 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-46**<br>A2506550 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | <1% Chrysotile |
| **SED-C-35**<br>A2506551 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-37**<br>A2506552 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-36**<br>A2506553 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| Lab Notes: Samples A2506553-A2506580 analyzed by Greg Ruff. | | | | | | | |
| **SED-C-66**<br>A2506554 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-69**<br>A2506555 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-68**<br>A2506556 | Soil | Heterogeneous<br>Brown,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-77**<br>A2506557 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | <1% | Cellulose | 100% | Soil | None Detected |
| **SED-C-76**<br>A2506558 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-75**<br>A2506559 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-74**<br>A2506560 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-73**<br>A2506561 | Soil | Heterogeneous<br>Brown,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-72**<br>A2506562 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-93**<br>A2506563 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-94**<br>A2506564 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95%<br><1% | Soil<br>Metal Foil | None Detected |
| **SED-C-38**<br>A2506565 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-65**<br>A2506566 | Soil | Heterogeneous<br>Gray,Black<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-40**<br>A2506567 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-39**<br>A2506568 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5% | Cellulose | 95% | Soil | None Detected |
| **SED-C-70**<br>A2506569 | Soil | Heterogeneous<br>Brown,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-71**<br>A2506570 | Soil | Heterogeneous<br>Brown,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-10**<br>A2506571 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-72-2**<br>A2506572 | Soil | Heterogeneous<br>Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-70-2**<br>A2506573 | Soil | Heterogeneous<br>Brown,Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |

# ASBESTOS BULK ANALYSIS
**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-13718
**Date Received:** 09-27-17
**Date Analyzed:** 09-27-17
**Date Reported:** 09-27-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **SED-C-69-2**<br>A2506574 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-71-2**<br>A2506575 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-65-2**<br>A2506576 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1%<br><1% | Cellulose<br>Fiberglass<br>Talc | 95% | Soil | None Detected |
| **SED-C-68-2**<br>A2506577 | Soil | Heterogeneous<br>Black<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-67-2**<br>A2506578 | Soil | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-66-2**<br>A2506579 | Soil | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 5%<br><1% | Cellulose<br>Fiberglass | 95% | Soil | None Detected |
| **SED-C-51**<br>A2506580 | Soil | Heterogeneous<br>Black,Gray<br>Fibrous<br>Bound | 5%<br><1%<br><1% | Cellulose<br>Fiberglass<br>Talc | 95% | Soil | None Detected |

| | | |
|---|---|---|
| **LEGEND:** | Non-Anth | = Non-Asbestiform Anthophyllite |
| | Non-Trem | = Non-Asbestiform Tremolite |
| | Calc Carb | = Calcium Carbonate |

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

**REPORTING LIMIT:** <1% by visual estimation

**REPORTING LIMIT FOR POINT COUNTS:** 0.25% by 400 Points or 0.1% by 1,000 Points

**REGULATORY LIMIT:** >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

**ANALYST:** Gary A. Swanson

**APPROVED BY:** Tianbao Bai, Ph.D., CIH
Laboratory Director

Anna Malmberg

NVLAP TESTING
NVLAP LAB CODE 101768-0

(84) A7.13.718

# ASBESTOS A2506497
# CHAIN OF CUSTODY A2506580

CEI LABS

730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

| LAB USE ONLY: |
|---|
| CEI Lab Code: |
| CEI Lab I.D. Range: |

| COMPANY INFORMATION | PROJECT INFORMATION |
|---|---|
| CEI CLIENT #: | Job Contact: Matt Grove |
| Company: Amec Foster Wheeler | Email / Tel: matt.grove@amecfw.com |
| Address: 271 Mill Rd, 3rd Floor Chelmsford, MA 01824 | Project Name: Wynn Sediment Remediation |
| | Project ID#: 3651170065 |
| Email: matt.grove@amecfw.com | PO #: |
| Tel: 978-392-5398 Fax: | STATE SAMPLES COLLECTED IN: MA |

*IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.*

| ASBESTOS | METHOD | TURN AROUND TIME | | | | | |
|---|---|---|---|---|---|---|---|
| | | 4 HR | 8 HR | 24 HR | 2 DAY | 3 DAY | 5 DAY |
| PLM BULK | EPA 600 | ☐ | ☒ | ☐ | ☐ | ☐ | ☐ |
| PLM POINT COUNT (400) | EPA 600 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM POINT COUNT (1000) | EPA 600 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM GRAV w POINT COUNT | EPA 600 | | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM BULK | CARB 435 | | ☐ | ☐ | ☐ | ☐ | ☐ |
| PCM AIR | NIOSH 7400 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | EPA AHERA | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | NIOSH 7402 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | ISO 10312 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | ASTM 6281-09 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM BULK | CHATFIELD | | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM DUST WIPE | ASTM D6480-05 (2010) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM DUST MICROVAC | ASTM D5755-09 (2014) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM SOIL | ASTM D7521-13 | | | ☐ | ☐ | ☐ | ☐ |
| TEM VERMICULITE | CINCINNATI METHOD | | | ☐ | ☐ | ☐ | ☐ |
| OTHER: | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

REMARKS / SPECIAL INSTRUCTIONS:

☑ Accept Samples
☐ Reject Samples

| Relinquished By: | Date/Time | Received By: | Date/Time |
|---|---|---|---|
| Katherine Mason/Charter | | DC | 9-27 9:50 |
| | | | 11:30 |

*Samples will be disposed of 30 days after analysis*

*Page* 1 *of* _____

Version: CCOC.01.17.1/2.LD

M7. 13.718

# ASBESTOS SAMPLING FORM

CEI LABS

| COMPANY CONTACT INFORMATION | |
|---|---|
| Company: Amec Foster Wheeler | Job Contact: Matt Grove |
| Project Name: Wynn Sediment Remediation | |
| Project ID #: 3651170065 | Tel: 978-392-5398 |

| SAMPLE ID# | DESCRIPTION / LOCATION | VOLUME/ AREA | TEST | |
|---|---|---|---|---|
| SED-C-20 | (0-2.3') / cell 20 | | PLM ☒ | TEM ☐ |
| SED-C-48 | (0-3.2') / cell 48 | | PLM ☒ | TEM ☐ |
| SED-C-25 | (0-3.3') / cell 25 | | PLM ☒ | TEM ☐ |
| SED-C-23 | (0-1.9') / cell 23 | | PLM ☒ | TEM ☐ |
| SED-C-22 | (0-1.2') / cell 22 | | PLM ☒ | TEM ☐ |
| SED-C-13 | (0-2.9') / cell 13 | | PLM ☒ | TEM ☐ |
| SED-C-19 | (0-3.0') / cell 19 | | PLM ☒ | TEM ☐ |
| SED-C-28 | (0-2.7') / cell 28 | | PLM ☒ | TEM ☐ |
| SED-C-21 | (0-2.6') / cell 21 | | PLM ☒ | TEM ☐ |
| SED-C-18 | (0-1.0') / cell 18 | | PLM ☒ | TEM ☐ |
| SED-C-24 | (0-2.0') / cell 24 | | PLM ☒ | TEM ☐ |
| SED-C-17 | (0-3.0') / cell 17 | | PLM ☒ | TEM ☐ |
| SED-C-12 | (0-1.8') / cell 12 | | PLM ☒ | TEM ☐ |
| SED-C-15 | (0-1.9') / cell 15 | | PLM ☒ | TEM ☐ |
| SED-C-16 | (0-3.1') / cell 16 | | PLM ☒ | TEM ☐ |
| SED-C-49 | (0-2.5') / cell 49 | | PLM ☒ | TEM ☐ |
| SED-C-14 | (0-2.8') / cell 14 | | PLM ☒ | TEM ☐ |
| SED-C-50 | (0-6.0') / cell 50 | | PLM ☒ | TEM ☐ |
| SED-C-78 | (0-3.0') / cell 78 | | PLM ☒ | TEM ☐ |
| SED-C-79 | (0-2.6') / cell 79 | | PLM ☒ | TEM ☐ |
| SED-C-27 | (0-5.6') / cell 27 | | PLM ☒ | TEM ☐ |
| SED-C-26 | (0-6.0') / cell 26 | | PLM ☒ | TEM ☐ |
| SED-C-52 | (0-6.3') / cell 52 | | PLM ☒ | TEM ☐ |
| SED-C-56 | (0-5.2') / cell 56 | | PLM ☒ | TEM ☐ |
| SED-C-55 | (0-5.9') / cell 55 | | PLM ☒ | TEM ☐ |
| SED-C-64 | (0-3.8') / cell 64 | | PLM ☒ | TEM ☐ |
| SED-C-54 | (0-7.6') / cell 54 | | PLM ☒ | TEM ☐ |
| SED-C-53 | (0-6.5') / cell 53 | | PLM ☒ | TEM ☐ |

11-15-718

# ASBESTOS SAMPLING FORM

CEI LABS

| COMPANY CONTACT INFORMATION | |
|---|---|
| Company: Amec Foster Wheeler | Job Contact: Matt Grove |
| Project Name: Wynn Sediment Remediation | |
| Project ID #: 3651170065 | Tel: 978-392-5398 |

| SAMPLE ID# | DESCRIPTION / LOCATION | VOLUME/ AREA | TEST | | | |
|---|---|---|---|---|---|---|
| SED-C-58 | (0-6.5') / cell 58 | | PLM | X | TEM | |
| SED-C-59 | (0-6.9') / cell 59 | | PLM | X | TEM | |
| SED-C-57 | (0-7.5') / cell 57 | | PLM | X | TEM | |
| SED-C-2 | (0-2.0') / cell 2 | | PLM | X | TEM | |
| SED-C-4 | (0-1.5') / cell 4 | | PLM | X | TEM | |
| SED-C-9 | (0-1.5') / cell 9 | | PLM | X | TEM | |
| SED-C-6 | (0-1.4') / cell 6 | | PLM | X | TEM | |
| SED-C-8 | (0-1.3') / cell 8 | | PLM | X | TEM | |
| SED-C-11 | (0-1.6') / cell 11 | | PLM | X | TEM | |
| SED-C-5 | (0-1.6') / cell 5 | | PLM | X | TEM | |
| SED-C-7 | (0-2.2') / cell 7 | | PLM | X | TEM | |
| SED-C-34 | (0-8.0') / cell 34 | | PLM | X | TEM | |
| SED-C-43 | (0-6.6') / cell 43 | | PLM | X | TEM | |
| SED-C-41 | (0-7.0') / cell 41 | | PLM | X | TEM | |
| SED-C-42 | (0-7.3') / cell 42 | | PLM | X | TEM | |
| SED-C-63 | (0-3.7') / cell 63 | | PLM | X | TEM | |
| SED-C-61 | (0-6.3') / cell 61 | | PLM | X | TEM | |
| SED-C-62 | (0-5.8') / cell 62 | | PLM | X | TEM | |
| SED-C-60 | (0-5.8') / cell 60 | | PLM | X | TEM | |
| SED-C-1 | (0-1.5') / cell 1 | | PLM | X | TEM | |
| SED-C-3 | (0-2.0') / cell 3 | | PLM | X | TEM | |
| SED-C-80 | (0-2.0') / cell 80 | | PLM | X | TEM | |
| SED-C-44 | (0-0.7') / cell 44 | | PLM | X | TEM | |
| SED-C-45 | (0-7.9') / cell 45 | | PLM | X | TEM | |
| SED-C-47 | (0-8.1') / cell 47 | | PLM | X | TEM | |
| SED-C-46 | (0-8.0') / cell 46 | | PLM | X | TEM | |
| SED-C-35 | (0-8.6') / cell 35 | | PLM | X | TEM | |
| SED-C-37 | (0-7.9') / cell 37 | | PLM | X | TEM | |

# ASBESTOS SAMPLING FORM

CEI LABS

| COMPANY CONTACT INFORMATION | |
|---|---|
| Company: Amec Foster Wheeler | Job Contact: Matt Grove |
| Project Name: Wynn Sediment Remediation | |
| Project ID #: 3651170065 | Tel: 978-392-5398 |

| SAMPLE ID# | DESCRIPTION / LOCATION | VOLUME/ AREA | TEST | |
|---|---|---|---|---|
| SED-C-36 | (0-9.5') / cell 36 | | PLM ☒ | TEM ☐ |
| SED-C-66 | (0-10.3') / cell 66 | | PLM ☒ | TEM ☐ |
| SED-C-69 | (0-3.9') / cell 69 | | PLM ☒ | TEM ☐ |
| SED-C-68 | (0-3.1') / cell 68 | | PLM ☒ | TEM ☐ |
| SED-C-77 | (0-6.4') / cell 77 | | PLM ☒ | TEM ☐ |
| SED-C-76 | (0-7.7') / cell 76 | | PLM ☒ | TEM ☐ |
| SED-C-75 | (0-2.1') / cell 75 | | PLM ☒ | TEM ☐ |
| SED-C-74 | (0-5.7') / cell 74 | | PLM ☒ | TEM ☐ |
| SED-C-73 | (0-1.7') / cell 73 | | PLM ☒ | TEM ☐ |
| SED-C-72 | (0-1.9') / cell 72 | | PLM ☒ | TEM ☐ |
| SED-C-93 | (0-3.3') / cell 93 | | PLM ☒ | TEM ☐ |
| SED-C-94 | (0-5.6') / cell 94 | | PLM ☒ | TEM ☐ |
| SED-C-38 | (0-8.9') / cell 38 | | PLM ☒ | TEM ☐ |
| SED-C-65 | (0-7.0') / cell 65 | | PLM ☒ | TEM ☐ |
| SED-C-40 | (0-8.9') / cell 40 | | PLM ☒ | TEM ☐ |
| SED-C-39 | (0-9.8') / cell 39 | | PLM ☒ | TEM ☐ |
| SED-C-70 | (0-2.8') / cell 70 | | PLM ☒ | TEM ☐ |
| SED-C-71 | (0-1.7') / cell 71 | | PLM ☒ | TEM ☐ |
| SED-C-10 | (0-2.9') / cell 10 | | PLM ☒ | TEM ☐ |
| SED-C-72-2 | (0-3.1') / cell 72-2 | | PLM ☒ | TEM ☐ |
| SED-C-70-2 | (0-1.0') / cell 70-2 | | PLM ☒ | TEM ☐ |
| SED-C-69-2 | (0-4.0') / cell 69-2 | | PLM ☒ | TEM ☐ |
| SED-C-71-2 | (0-1.9') / cell 71-2 | | PLM ☒ | TEM ☐ |
| SED-C-65-2 | (0-3.5') / cell 65-2 | | PLM ☒ | TEM ☐ |
| SED-C-68-2 | (0-5.3') / cell 68-2 | | PLM ☒ | TEM ☐ |
| SED-C-67-2 | (0-3.5') / cell 67-2 | | PLM ☒ | TEM ☐ |
| SED-C-66-2 | (0-5.3') / cell 66-2 | | PLM ☐ | TEM ☐ |
| SED-C-57 | (0-5.5') / cell 57 | | PLM ☐ | TEM ☐ |

October 20, 2017

AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CLIENT PROJECT:** Wynn Sediment Remediation; 3651170065
**CEI LAB CODE:** A17-14869

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on October 20, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

# ASBESTOS ANALYTICAL REPORT
# By: Polarized Light Microscopy

**Prepared for**

## AMEC Foster Wheeler

CLIENT PROJECT: Wynn Sediment Remediation; 3651170065

CEI LAB CODE: A17-14869

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 10/20/17

TOTAL SAMPLES ANALYZED: 4

# SAMPLES >1% ASBESTOS:

**TEL: 866-481-1412**

***www.ceilabs.com***

# Asbestos Report Summary

**By: POLARIZING LIGHT MICROSCOPY**

**PROJECT:** Wynn Sediment Remediation; 3651170065

**CEI LAB CODE:** A17-14869

**METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020**

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|---|---|---|---|---|---|
| Cell 46-A1 | | A2524807 | Gray,Black | Soil | None Detected |
| Cell 46-A2 | | A2524808 | Gray,Black | Soil | None Detected |
| Cell 46-A3 | | A2524809 | Gray,Black | Soil | None Detected |
| Cell 46-A4 | | A2524810 | Gray,Black | Soil | None Detected |

# ASBESTOS BULK ANALYSIS

**By: POLARIZING LIGHT MICROSCOPY**

**Client:** AMEC Foster Wheeler
271 Mill Road
Chelmsford, MA 01824

**CEI Lab Code:** A17-14869
**Date Received:** 10-20-17
**Date Analyzed:** 10-20-17
**Date Reported:** 10-20-17

**Project:** Wynn Sediment Remediation; 3651170065

## ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID<br>Lab ID | Lab<br>Description | Lab<br>Attributes | NON-ASBESTOS COMPONENTS<br>Fibrous | | Non-Fibrous | | ASBESTOS<br>% |
|---|---|---|---|---|---|---|---|
| **Cell 46-A1**<br>A2524807 | Soil | Heterogeneous<br>Gray,Black<br>Non-fibrous<br>Bound | <1% | Cellulose | 100% | Soil | None Detected |
| **Cell 46-A2**<br>A2524808 | Soil | Heterogeneous<br>Gray,Black<br>Non-fibrous<br>Bound | <1% | Cellulose | 100% | Soil | None Detected |
| **Cell 46-A3**<br>A2524809 | Soil | Heterogeneous<br>Gray,Black<br>Non-fibrous<br>Bound | <1% | Cellulose | 100% | Soil | None Detected |
| **Cell 46-A4**<br>A2524810 | Soil | Heterogeneous<br>Gray,Black<br>Non-fibrous<br>Bound | <1% | Cellulose | 100% | Soil | None Detected |

| | | |
|---|---|---|
| **LEGEND:** | Non-Anth | = Non-Asbestiform Anthophyllite |
| | Non-Trem | = Non-Asbestiform Tremolite |
| | Calc Carb | = Calcium Carbonate |

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

**REPORTING LIMIT:** <1% by visual estimation

**REPORTING LIMIT FOR POINT COUNTS:** 0.25% by 400 Points or 0.1% by 1,000 Points

**REGULATORY LIMIT:** >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

**ANALYST:** Taylor B. Metcalf

**APPROVED BY:** Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP TESTING
NVLAP LAB CODE 101768-0

(7) A17-14.86
A 2524807
A 2524815

# ASBESTOS CHAIN OF CUSTODY

CEI LABS

730 SE Maynard Road, Cary, NC 27511
Tel: 866-481-1412; Fax: 919-481-1442

| | |
|---|---|
| *LAB USE ONLY:* | |
| **CEI Lab Code:** | |
| **CEI Lab I.D. Range:** | |

| **COMPANY INFORMATION** | **PROJECT INFORMATION** |
|---|---|
| **CEI CLIENT #:** | Job Contact: Matt Grove |
| Company: Amec Foster Wheeler | Email / Tel: matt.grove@amecfw.com |
| Address: 271 Mill Rd, 3rd Floor Chelmsford, MA 01824 | Project Name: Wynn Sediment Remediation |
| | Project ID#: 3651170065 |
| Email: matt.grove@amecfw.com | PO #: |
| Tel: 978-392-5398 Fax: | **STATE SAMPLES COLLECTED IN:** MA |

***IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.***

| | | TURN AROUND TIME | | | | | |
|---|---|---|---|---|---|---|---|
| **ASBESTOS** | **METHOD** | **4 HR** | **8 HR** | **24 HR** | **2 DAY** | **3 DAY** | **5 DAY** |
| PLM BULK | EPA 600 | ☐ | ☒ | ☐ | ☐ | ☐ | ☐ |
| PLM POINT COUNT (400) | EPA 600 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM POINT COUNT (1000) | EPA 600 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM GRAV w POINT COUNT | EPA 600 | | ☐ | ☐ | ☐ | ☐ | ☐ |
| PLM BULK | CARB 435 | | ☐ | ☐ | ☐ | ☐ | ☐ |
| PCM AIR | NIOSH 7400 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | EPA AHERA | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | NIOSH 7402 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | ISO 10312 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM AIR | ASTM 6281-09 | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM BULK | CHATFIELD | | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM DUST WIPE | ASTM D6480-05 (2010) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM DUST MICROVAC | ASTM D5755-09 (2014) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| TEM SOIL | ASTM D7521-13 | | | ☐ | ☐ | ☐ | ☐ |
| TEM VERMICULITE | CINCINNATI METHOD | | | ☐ | ☐ | ☐ | ☐ |
| OTHER: | | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

REMARKS / SPECIAL INSTRUCTIONS:
Analyze samples A1 through A4 first and then call Matt Grove with verbal report.
Hold additional samples pending direction from Matt Grove.

☑ Accept Samples
☐ Reject Samples

| **Relinquished By:** | **Date/Time** | **Received By:** | **Date/Time** |
|---|---|---|---|
| John Rai | 10/19/17 1315 | Jason Raimondi | AA 10 20 17 9:00 |
| [signature] | 10/19/17 1510 | Fedex | |

***Samples will be disposed of 30 days after analysis***

***Page _____ of _____***

Version: CCOC.01.17.1/2.LD

A12-14-869

# ASBESTOS SAMPLING FORM

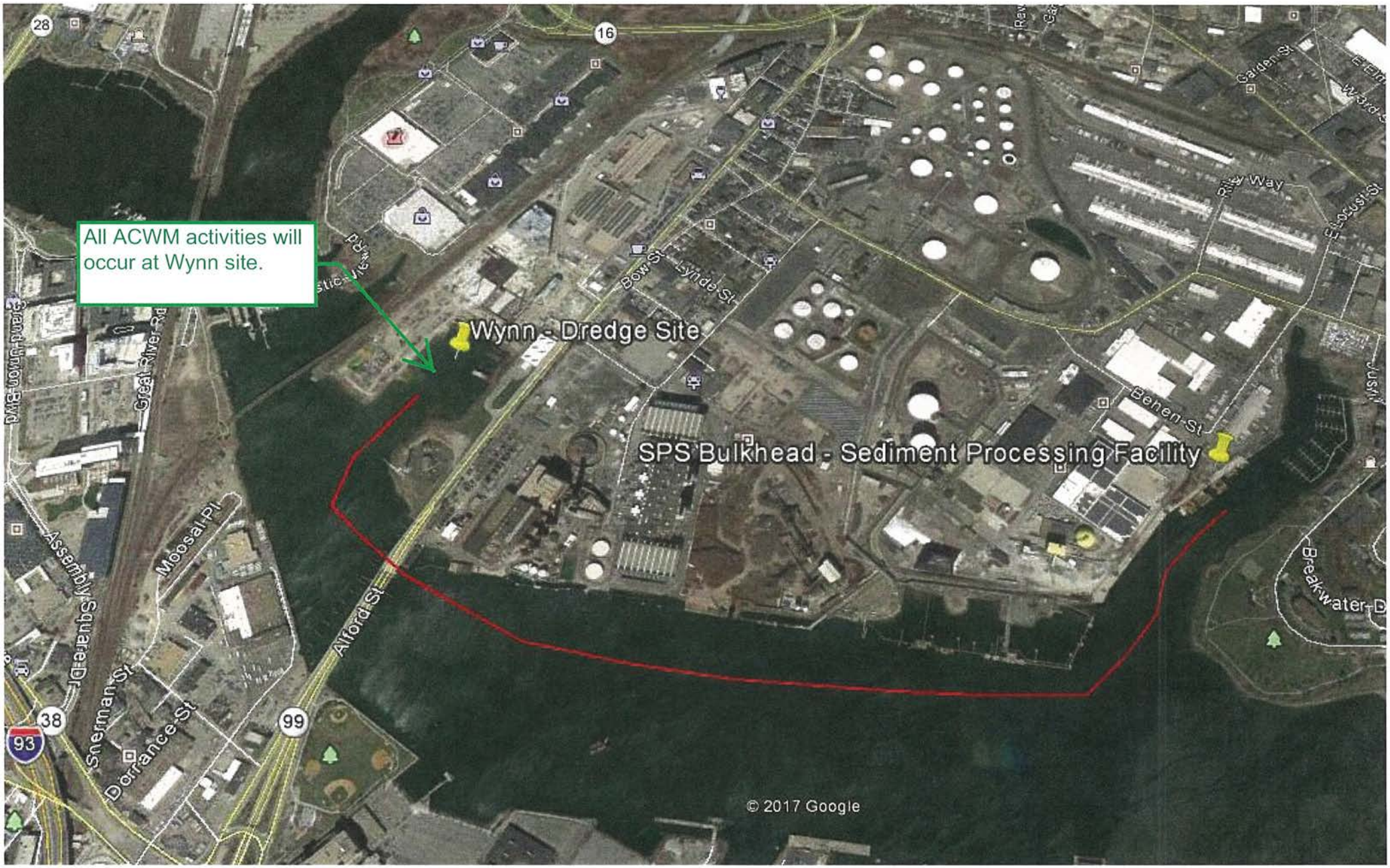
CEI LABS

| COMPANY CONTACT INFORMATION | |
|---|---|
| Company: Amec Foster Wheeler | Job Contact: Matt Grove |
| Project Name: Wynn Sediment Remediation | |
| Project ID #: 3651170065 | Tel: 978-392-5398 |

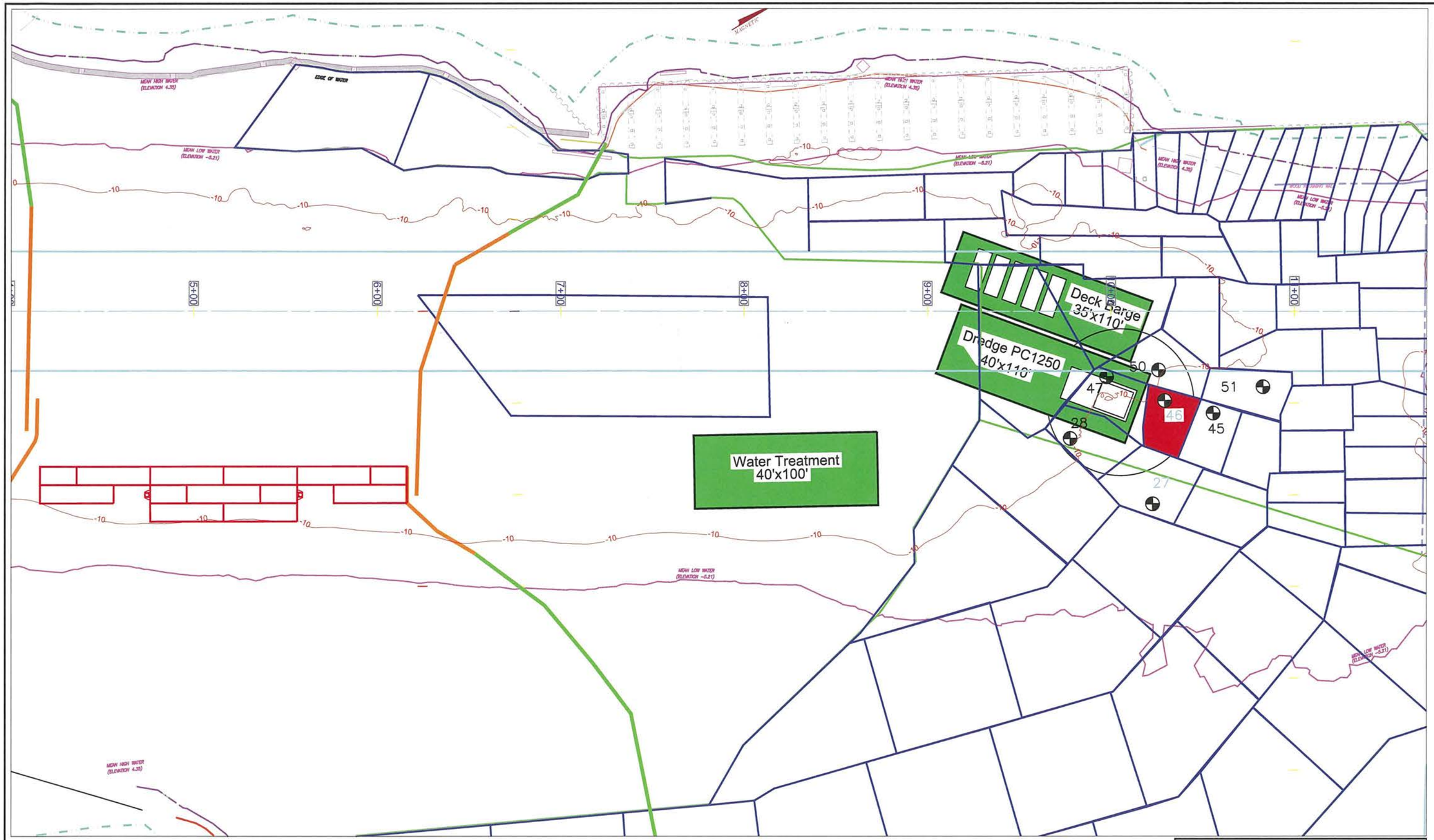
| SAMPLE ID# | DESCRIPTION / LOCATION | VOLUME/ AREA | TEST | |
|---|---|---|---|---|
| Cell 46-A1 | | | PLM ☒ | TEM ☐ |
| Cell 46-A2 | | | PLM ☒ | TEM ☐ |
| Cell 46-A3 | | | PLM ☒ | TEM ☐ |
| Cell 46-A4 | | | PLM ☒ | TEM ☐ |
| Cell46-B1 | Hold | | PLM ☒ | TEM ☐ |
| Cell46-B2 | Hold | | PLM ☒ | TEM ☐ |
| Cell46-B3 | Hold | | PLM ☒ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |
| | | | PLM ☐ | TEM ☐ |

Page _____ of _____

# APPENDIX D
# SITE LOCUS PLAN


All ACWM activities will occur at Wynn site.
Wynn - Dredge Site
SPS Bulkhead - Sediment Processing Facility
Bow St
Lynde St
Garden St
Riley Way
Behen St
Alford St
Moosal Pl
Assembly Square Dr
Sherman St
Dorrance St
Great Silver Rd
Breakwater
28
16
38
93
99
© 2017 Google

# APPENDIX E
# SITE OPERATION PLANS




GRAPHIC SCALE

( IN FEET )
1 inch = 60 ft.

| PROJECT DETAILS | |
|---|---|
| HORIZONTAL DATUM: | NAVD83 |
| LOCAL GRID: | MA- Mainland |
| VERTICAL DATUM: | NAVD88 |
| UNITS HORIZ. / VERT.: | FT/FT |
| SURVEY/PROJ. CONTROL POINT: | X= |
| | Y= |
| | Z= |
| SURVEY/PROJ. BENCH MARK: | X= |
| | Y= |
| | Z= |
| TIDE STAFF LOCATION: | |

Charter Contracting Company, LLC
500 Harrison Avenue Suite 4R Boston MA 02118
Phone: 857 246-6800 www.charter.us

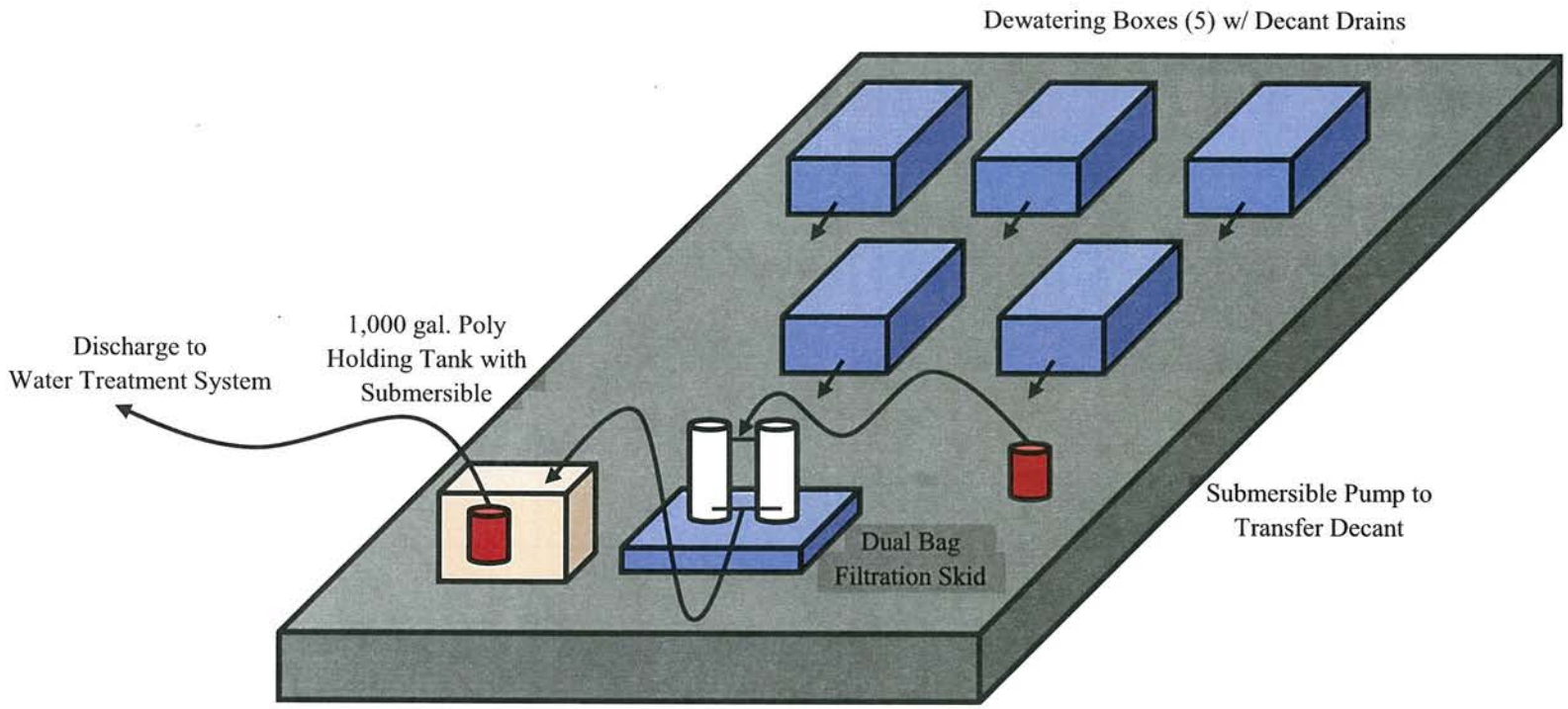
PROJECT: Wynn Boston Harbor Sediment Remediation
Everett, MA

DRAWING TITLE: Dredge Area Layout - Cell 46

| | |
|---|---|
| SCALE: | 1:50 |
| DATE: | |
| CHARTER JOB NO: | 2-1627 |
| Client Project No. | RTN 3-13341 |
| FILE NAME: | |
| DESIGNED BY: | KM |
| APPROVED BY: | |

PAGE 01 OF 01 PAGES

# APPENDIX F
# DEWATERING BOX DETAILS




**Notes**

1. Figure is not to scale.
2. 5 micron Filter will be used on barge

LRT
Lockwood Remediation Technologies LLC

89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

**Dewatering Box Layout**
Wynn Dredge
Everett, Massachusetts

*Bolted-in perforated basket for easy removal*

# 25 Yard Dewatering Box

## with Steel Hard Top

(Available in select locations)

Capacity: 25 yd
Height: 6' 6"
Width: 8' 6"
Length: 23'
Tare Weight: 9,000 lbs

*All sizes are approximate*

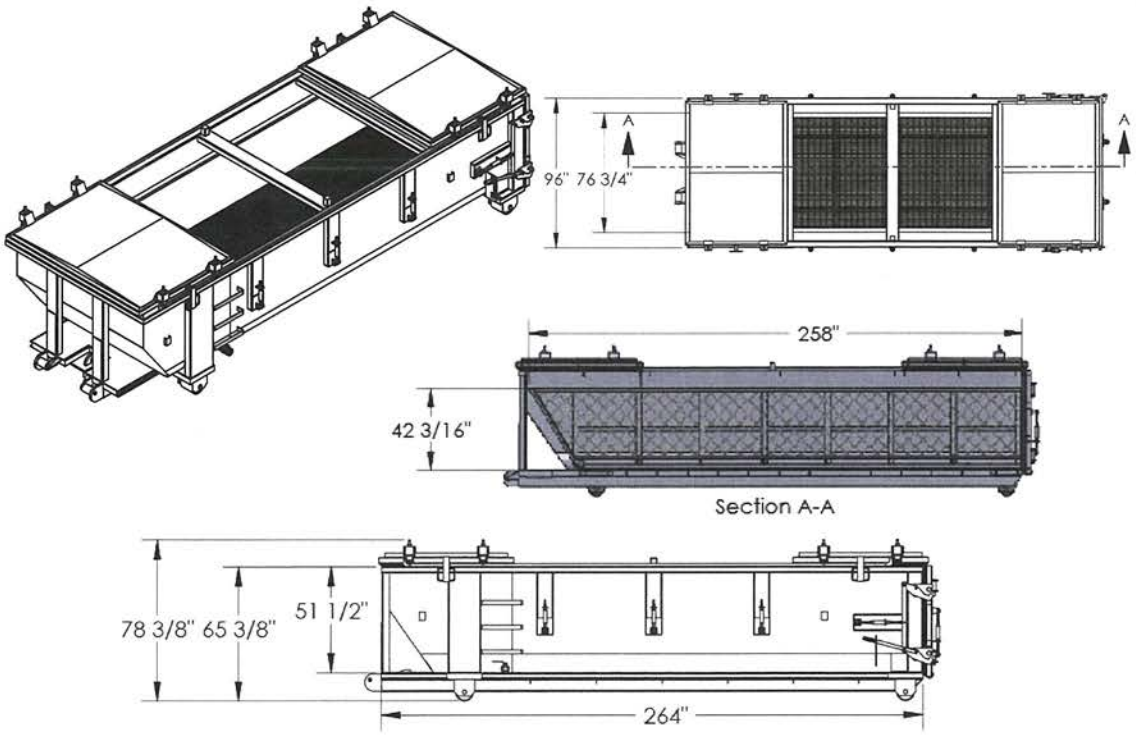
At Adler Tank Rentals, we are committed to providing safe and reliable containment solutions for all types of applications where performance matters.

Fitted with a bolted-in, easily removed perforated basket, the 25 Yard Dewatering Box with Steel Hard Top is designed for convenient use and easy cleaning. Featuring a fully gasketed waterproof door, valved drains and a variety of fabric filter liner options, this product is topped with a hard steel top to protect the contents from unwanted debris, precipitation and visibility.

### Mechanical Features

- Sliding split roof lid equipped with ratcheting binders to lock in place
- 4" Drains
- Standard roll-off container with hard steel top
- Horizontal swinging, fully gasketed, watertight door with no crossbar to trap debris when dumping
- Bolted-in perforated basket for easy removal to assist in cleaning
- Compatible with standard roll-off frame truck
- Watertight gasketed rear door

# 25 Yard Dewatering Box with Steel Hard Top




## Options

- Nominal 100 micron geotextile fabric filter liners, individually packaged and fitted for rapid installation
- 250 micron synthetic fabric filter liners, individually packaged and fitted for rapid installation
- 400 micron synthetic fabric filter liners, individually packaged and fitted for rapid installation

## Comprehensive Service

Adler Tank Rentals provides containment solutions for hazardous and non-hazardous liquids and solids. We offer 24-hour emergency service, expert planning assistance, transportation, repair and cleaning services. All of our rental equipment is serviced by experienced Adler technicians and tested to exceed even the most stringent industry standards.

ADLER TANK RENTALS

800-421-7471 www.adlertankrentals.com

© 2013 McGrath RentCorp. All rights reserved. Printed on recycled paper.

# APPENDIX G
# WATER TREATMENT SYSTEM DESCRIPTION

**NOTE:** All water pumped from ACWM bins and/or used for ACWM decontamination will pass through a 5-micron filter before being treated with the system described below.

## Description of Water Treatment System

All water generated from the dredge will be routed to the water treatment system located on a barge adjacent to the hopper barge. The anticipated wastewater will derive from the mechanical dredging decant. During dredging activities, the contractor will pump the decanted water from the hopper barge to the treatment system. The maximum influent flow rate will not exceed 250 gallons per minute (gpm). The primary contaminants of concern in the waste stream include total suspended solids (TSS), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs).

The treatment system is capable of treating a waste stream of up to 250 gpm and begins with two (2) 18,000-gallon weir tanks in parallel. Water in the weir tanks will flow, via gravity, into two (2) 10,000-gallon clarifiers in parallel. Two chemical additions; LRT-E-50 Coagulant and LRT-800 Series Flocculant will be added to aid in the settling process. The coagulant will be injected into the influent stream prior to entering the weir tanks for rapid mixing while the flocculant will be injected into the weir tanks for a slow mixing. The weir tanks will be raised 12 inches to allow for gravity flow into the clarifiers that contain baffles and settling tube media. The sediment will collect in the baffles and will be pumped out through the manifolds located on each side of the tanks. From the clarifier, a centrifugal pump will transfer water through a bag filter manifold with two (2) multi bag filter vessels plumbed in parallel such that one bag filter vessel (containing six (6) No. 2 bag filters) can operate while the other remains in standby. During a bag filter change out, one vessel is removed from service while one remains in operation so that water treatment never needs to be shut down. Each bag filter housing includes isolation valves, sample ports, and pressure gauges on the influent and effluent piping so that it is clear when a bag filter changeout is required. The maximum flow rate through the specified bag filters is 500 gpm and 125 pounds per square inch (PSI).

From the bag filters, water is discharged to one (1) zeolite vessel (10,000 lbs.) and two (2) parallel trains each containing two (2) liquid phase carbon vessels (3,000 lbs.) in series. There will be a total of one (1) zeolite vessel and four (4) carbon vessels. The zeolite vessel is rated for a maximum flowrate of 300 gpm and 75 PSI while the liquid phase carbon vessels are rated for a maximum flow rate of 200 gpm and 75 PSI. Following the carbon vessels will be one (1) flow meter/totalizer. Effluent water will be discharged to the embayment, inside a fully enclosed area surrounded by a turbidity curtain, also known as the "work area".

The system components will be connected using a combination of rubber suction hose and SCH40/SCH80 PVC piping. The connection from the weir tanks to the clarifiers will be made primarily with 6-inch/4-inch hard pipe. With the exception of the weir tanks and clarifiers, the treatment system will be enclosed in a wooden structure approximately 45 feet long, 8 feet wide and 12.5 feet tall. This enclosure will be heated and provided with lighting. In addition, tank heaters will be placed in the weir tanks.

Spill containments will be under all the tanks and the treatment system. Containment areas will be pumped down daily or as needed and the water from the spills or rain will be pumped into the weir tanks for treatment.

LEAD BASED PAINT - ASBESTOS - MOLD
LBP SOLUTIONS



# DAILY SITE LOG

| | |
|---|---|
| Date: 12/20/17 | Project #: J170204 |
| Client: Amec Foster Wheeler (Amec) | Site Location: 1 Horizon Way, Everett, MA |
| Work Area(s): Boston Harbor, Grid 46 – Barges | Shift Times: 0900 – 1600 |
| Project Monitor: Mark Jacobs (MJ) | Certification #: AM900522 |
| Contractor: Charter Contracting Company, LLC (CCC) | Supervisor: Edward Price (EP) |

| TIME | SITE NOTES / COMMENTS |
|---|---|
| 0800 | MJ of LBP Solutions, LLC (LBP) arrives onsite at SPS New England, Inc (SPS) |
| | dock area to review the NT Plan for the dredging of approx. 25cy |
| | of ACWM sediment from Grid 46 from the harbor. |
| 0808 | MJ speaks with Matt Grove (MG) of Amec to get SPS contact |
| | onsite. |
| 0836 | MJ speaks with Katherine of Charter in the trailer and she |
| | will be informing the proper people LBP is onsite and ready to setup |
| | the 4-point PCM air Monitoring. |
| 0847 | MJ loads boat with equipment and is ready to leave for Grid 46 |
| | work area. |
| 0921 | Still waiting on boat for another CCC crew member before leaving |
| | for work area. |
| 0936 | MJ informs MG of the delay. |
| 0955 | Boat leaves SPS area for the barges at Grid 46 with LBP and Charter. |
| 1009 | Boat arrives at Grid 46 work area and board the dredge barge. |
| | MJ speaks with John Rice (JR) the Onsite Engineer for Amec to |
| | review the NT Plan. Charter has to adjust the position of the |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

Signature: Mark Jacobs

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| | dredge barge and the deck barge that holds the roll off dewatering boxes. Roll offs are equiped with 5micron filters and are placed on poly with a perimeter berm covering the deck barge and preventing ACWM sediment and contaminated water from falling back into the harbor. Charter has to wait for another barge not associated with NT Plan to move before they can position barges to begin work. Could take over 1 hour. |
| 1022 | Charter begins lining the roll offs. |
| 1124 | MJ speaks with EP and Charter crew has finished lining the roll offs and have started to adjust both barges around Grid 46 to begin remediation utilizing an excavator with a dredge attachment. |
| 1144 | MJ calibrates the HV pumps for the 4-Point Monitoring at 6.15LPM. 2 pumps on dredge barge and 2 pumps on deck barge. |
| 1153 | Charter putting up the asbestos tape on both barges to create the exclusion zones. Charter is putting up proper signage on roll offs and checking all the roll offs and water pump are equiped with 5micron filter and are functioning. |
| 1213 | Stephanie Davenhauer (SD) the Project Cordinator for Wynn is onsite. EP holds pre-remediation meeting with Charter, LBP, Wynn, and SPS workers to review work plan and final safety checks. Work on hold waiting for charter worker to arrive at barge |
| 1241 | Charter worker arrives onsite and crew readies for remediation. |
| 1257 | Excavator begins dredging Grid 46 ACWM sediment into roll offs. |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

**Signature:** Mark Jacob

**Daily Site Log, Continued**

| TIME | SITE NOTES / COMMENTS |
|---|---|
| 1331 | Excavator continuing to dredge Grid 46. All Charter's workers in the regulated area are wearing proper PPE and are utilizing the procedures in the NT Plan to keep down dust and contamination. |
| 1348 | Charter has finished dredging the approx. 25 CY of ACWM sediment from Grid 46 and they decontaminate the dredge attachment of the excavator. |
| 1359 | Charter sealing and labeling the liners of the roll offs. |
| 1413 | MJ post calibrates the 4 HV pumps for the 4-point monitoring at 6.15LPM. |
| 1427 | Charter is decanning the deck barge. |
| 1433 | MJ speaks with EP and the roll offs will remain on the barge for 24hrs to dewater. NO clearance for deck barge. |
| 1441 | Charter is taking up the last section of poly and berm and loading into the last roll off before its sealed. All workers wearing proper PPE. |
| 1514 | Charter finishes cleaning up berm and poly. |
| 1523 | LBP, Charter, and Wynn are picked up by boat and go back to SPS area. |
| 1545 | MJ speaks with EP, SD, and others about the process of disposal if sediment in roll offs passes/fails saturation test. Charter will notify Amec when LBP will be needed back out onsite for the final clearance of the deck barge and roll offs. |
| 1600 | MJ leaves worksite |

13 Bird St. Suite 6
Foxboro, MA 02035
844-527-5323
Fax: 774-215-5275

**Signature:** Mark Jacob

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

**Date:** 12/20/17

**Project:** J170204 **Contractor:** Charter Contracting Company, LLC

**Site Address:** 1 Horizon Way, Everett, MA

**Work Area:** Dredge Barge

**Asbestos Abatement Activities:**
Charter Utilized water and filter system with 5 micron filter to decontaminate Dredge barge, Dredge bucket, and filter skid.

**Visual Inspection Checklist:**

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

**Abated surfaces:** (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Edward Price

**Disclaimer:** The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

# Asbestos Air Sampling
## Chain of Custody

PCM NIOSH 7400 Method (Issue 2: Dated 8/15/1994)

MA - AA000238 RI - AAL130

LBP Solutions, LLC
13 Bird St, Suite 6
Foxboro, MA 02035
844-527-5323

| | | |
|---|---|---|
| Client Name: Amec Foster Wheeler | Project #: J170204 | Pass HSE Test Slide: yes |
| Project Location: 1 Horizon Way, Everett, MA | Microscope #: Nikon Alpha phot-YS2 | Graticule Field Area: .00785 |
| Collection Date: 12/20/17 | Rotometer #: HF-03 Date Calibrated: 9/27/17 | Phase Rings Aligned: yes |

| Sample ID# | Location / Worker / Task | Sample Type | Flow Rate Start | Flow Rate End | Flow Rate Ave | Time (24 hour) On | Time (24 hour) Off | Total Time | Total Volume | Fibers/ Fields | Fibers/ mm² | Fibers/ CC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | Blank | 10 | | | | | | | | Ø/100 | Ø | 0 |
| 02 | Blank | 10 | | | | | | | | Ø/100 | Ø | Ø |
| 03 | Deck Barge NE | 1 | 6.15 | 6.15 | 6.15 | 1144 | 1407 | 143 | 879 | 1.5/100 | 1.9108 | .0008 |
| 04 | ↓ SE | 1 | 6.15 | 6.15 | 6.15 | 1146 | 1408 | 142 | 873 | 1/100 | 1.2738 | .0005 |
| 05 | Dredge PC1250 S | 1 | 6.15 | 6.15 | 6.15 | 1147 | 1411 | 144 | 885 | Ø/100 | Ø | Ø |
| 06 | ↓ SW | 1 | 6.15 | 6.15 | 6.15 | 1150 | 1413 | 143 | 879 | Ø/100 | Ø | Ø |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

| Sampled By: | Transported By: | Received By: | Prepared By: | Analyzed By: |
|---|---|---|---|---|
| Name: Mark Jacobs | Name: | Name: | Name: | Name: |
| Signature: Mark Jacobs | Signature: | Signature: | Signature: | Signature: |
| Date: 12/20/17 | Date: | Date: | Date: | Date: |

**Sample Type:** 1.) Background 2.) Pre-Abatement 3.) Asbestos Abatement 4.) Final Cleaning 5.) Glove Bags 6.) Personals 7.) Final Air Clearance 8.) Waste Load Out 9.) Other Work 10.) Blank

**Comments:**

January 10, 2018

Mr. Matt Grove
Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824

Final Visual Inspection

Grid 46 Remediation and Dredge Barge Decontamination
1 Horizon Way
Everett, MA 02149

Dear Mr. Matt Grove,

On December 20, 2017, LBP Solutions, LLC (LBP) performed a visual inspection to determine the completion of asbestos remediation and decontamination activities. Remediation activities involved the removal of asbestos containing material and sediment from Grid 46 and the decontamination of dredge barge. Charter Contracting Company INC. Massachusetts Department of Labor Standards License # AC000877 conducted the redemiation utilizing an excavator with a dredge bucket and then utilized hand tools to decontaminate the dredge barge and dredge bucket. Upon visual inspection of the work area, no evidence of visible debris was observed. Mr. Mark Jacobs of LBP, Massachusetts Department of Labor Standards License # AM900522, performed the visual inspection.

A copy of the visual inspection log is also attached.

LBP would like to thank you for the opportunity to have serviced Mr. Matt Grove's environmental testing needs. If you have any questions regarding the completed testing, please don't hesitate to call.

Sincerely,

Mark Jacobs

Mark Jacobs
Project Manager

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

**Date:** 12/20/17

**Project:** J170204 **Contractor:** Charter Contracting Company, LLC

**Site Address:** 1 Horizon Way, Everett, MA

**Work Area:** Dredge Barge

**Asbestos Abatement Activities:**
Charter Utilized water and filter system with 5 micron filter to decontaminate Dredge barge, Dredge bucket, and filter skid.

**Visual Inspection Checklist:**

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

**Abated surfaces:** (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Edward Price

**Disclaimer:** The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

INSTITUTE FOR ENVIRONMENTAL EDUCATION

*This is to certify that*

**Mark J. Jacobs**

*has completed the requisite training, and has passed an examination for reaccreditation*

# Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

**Course Location**

**LBP Solutions**
**13 Bird Street Suite 6 Foxboro, MA 02035**

**July 3, 2017**
Course Dates

**17-0971-174-261380**
Certificate Number

**July 03, 2017**
Examination Date

**July 03, 2018**
Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887 Telephone 978.658.5272 www.ieetrains.com

**INSTITUTE FOR ENVIRONMENTAL EDUCATION**

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 1/23/18

Project: J170204

Contractor: Charter Contracting Company, LLC

Site Address: 1 Horizon Way, Everett, MA

Work Area: Deck barge - 2 Roll offs ACWM dumpsters

Asbestos Abatement Activities:
Crew Utilized hand tools, power tools and pressure washer to decontaminate the 2 roll off ACWM dumpsters.

**Visual Inspection Checklist:**

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

**Abated surfaces:** (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Matt McCabe

**Disclaimer:** The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

# Asbestos Air Sampling
## Chain of Custody

PCM NIOSH 7400 Method (Issue 2: Dated 8/15/1994)

MA - AA000238 RI - AAL130

LBP Solutions, LLC
13 Bird St, Suite 6
Foxboro, MA 02035
844-527-5323

| | | |
|---|---|---|
| Client Name: Amec Foster Wheeler | Project #: J170204 | Pass HSE Test Slide: yes |
| Project Location: 1 Horizon Way, Everett, MA | Microscope #: Nikon Alphaphot-YS2 | Graticule Field Area: .00785 |
| Collection Date: 1/23/18 | Rotometer #: HF-03 Date Calibrated: 9/27/17 | Phase Rings Aligned: yes |

| Sample ID# | Location / Worker / Task | Sample Type | Flow Rate Start | Flow Rate End | Flow Rate Ave | Time (24 hour) On | Time (24 hour) Off | Total Time | Total Volume | Fibers/ Fields | Fibers/ mm² | Fibers/ CC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | Blank | 10 | → | | | | | → | → | Ø/100 | Ø | Ø |
| 02 | Blank | 10 | → | | | | | → | → | Ø/100 | Ø | Ø |
| 03 | Deck Barge, Roll offs - N | 1 | 7.13 | 7.13 | 7.13 | 0909 | 1248 | 219 | 1,561 | 1.5/100 | 1.9108 | .0004 |
| 04 | ↓ ↓ - NW | 1 | 7.13 | * → | | 0911 | * → | | | | | → |
| 05 | ↓ ↓ - S | 1 | 7.13 | 7.13 | 7.13 | 0913 | 1251 | 218 | 1,554 | Ø/100 | Ø | Ø |
| 06 | ↓ ↓ - E | 1 | 7.13 | 7.13 | 7.13 | 0914 | 1252 | 218 | 1,554 | * → | | → |
| 07 | Deck Barge, Roll offs - N | 1 | 7.13 | 7.13 | 7.13 | 1248 | 1422 | 94 | 670 | * → | | → |
| 08 | ↓ ↓ - NW | 1 | 7.13 | * → | | 1249 | * → | | | | | → |
| 09 | ↓ ↓ - S | 1 | 7.13 | 7.13 | 7.13 | 1251 | 1426 | 95 | 677 | 2.5/100 | 3.1847 | .0018 |
| 10 | ↓ ↓ - E | 1 | 7.13 | 7.13 | 7.13 | 1252 | 1428 | 96 | 684 | Ø/100 | Ø | Ø |

| Sampled By: | Transported By: | Received By: | Prepared By: | Analyzed By: |
|---|---|---|---|---|
| Name: Mark Jacobs | Name: | Name: | Name: | Name: |
| Signature: Mark Jacobs | Signature: | Signature: | Signature: | Signature: |
| Date: 1/23/18 | Date: | Date: | Date: | Date: |

**Sample Type:** 1.) Background 2.) Pre-Abatement 3.) Asbestos Abatement 4.) Final Cleaning 5.) Glove Bags 6.) Personals 7.) Final Air Clearance 8.) Waste Load Out 9.) Other Work 10.) Blank

**Comments:** Samples 04 and 08 — Power to HV pump Tripped off do to Sever rain.
Samples 06 and 07 — Samples were damaged by Sever rain/wind, can't read.

January 26, 2018

Mr. Matt Grove
Senior Project Manager
Amec Foster Wheeler Environment & Infrastructure, Inc.
271 Mill Road
Chelmsford, MA 01824

Final Visual Inspection

Deck Barge and Roll Offs - Decontamination
1 Horizon Way
Everett, MA 02149

Dear Mr. Matt Grove,

On January 23, 2018, LBP Solutions, LLC (LBP) performed a visual inspection to determine the completion of asbestos decontamination activities. Decontamination activities involved the removal of asbestos contaminated sediment from the two roll offs and deck barge. Charter Contracting Company INC. Massachusetts Department of Labor Standards License # AC000877 conducted the decontamination utilizing hand tools, power tools, and pressure washer to decontaminate the deck barge and two roll offs. Upon visual inspection of the work area, no evidence of visible debris was observed. Mr. Mark Jacobs of LBP, Massachusetts Department of Labor Standards License # AM900522, performed the visual inspection.

A copy of the visual inspection log is also attached.

LBP would like to thank you for the opportunity to have serviced Mr. Matt Grove's environmental testing needs. If you have any questions regarding the completed testing, please don't hesitate to call.

Sincerely,

Mark Jacobs

Mark Jacobs
Project Manager

LEAD BASED PAINT · ASBESTOS · MOLD
LBP SOLUTIONS

Date: 1/23/18

Project: J170204

Contractor: Charter Contracting Company, LLC

Site Address: 1 Horizon Way, Everett, MA

Work Area: Deck barge - 2 Roll offs ACWM dumpsters

Asbestos Abatement Activities:
Crew Utilized hand tools, power tools and pressure washer to decontaminate the 2 roll off ACWM dumpsters.

**Visual Inspection Checklist:**

- [x] All non-essential equipment removed from the work area.
- [x] All asbestos containing waste material removed from the work area
- [x] Asbestos waste containers/bags properly sealed and labeled
- [ ] Negative air machines thoroughly cleaned including wheels and exhaust tubes. N/A
- [ ] Scaffolding and ladders thoroughly cleaned and free and clear of all visible debris N/A
- [x] Decontamination unit thoroughly cleaned and free and clear of all visible debris
- [ ] Interior polyethylene walls free and clear of all visible debris N/A
- [ ] Interior polyethylene floors free and clear of all visible debris N/A

**Abated surfaces:** (circle all that apply)

Pipes Fittings Tanks Boilers HVAC Components

Interior Walls Floors Roof Siding Sink Other Decontamination

Are the abated surfaces free and clear of all visible debris? yes

If no please describe additional cleaning required:

Industrial Hygienist: Mark Jacobs

Contractor Representative: Matt McCabe

**Disclaimer:** The intent of this document is to assist the licensed Asbestos Project Monitor in determining if the work area is free of all visible debris at the time of the inspection. This visual inspection is valid for the date on which it is signed. LBP Solutions, LLC does not take responsibility for site conditions that may change following a visual inspection.

INSTITUTE FOR ENVIRONMENTAL EDUCATION

*This is to certify that*

**Mark J. Jacobs**

*has completed the requisite training, and has passed an examination for reaccreditation*

# Asbestos Project Monitor Refresher

pursuant to Title II of the Toxic Substance Control Act, 15 U.S.C. 2646

**Course Location**

**LBP Solutions**
**13 Bird Street Suite 6 Foxboro, MA 02035**

**July 3, 2017**
Course Dates

**17-0971-174-261380**
Certificate Number

**July 03, 2017**
Examination Date

**July 03, 2018**
Expiration Date

Training Director

16 Upton Drive, Wilmington, MA 01887 Telephone 978.658.5272 www.ieetrains.com

**INSTITUTE FOR ENVIRONMENTAL EDUCATION**

Charter

| | | | | | | |
|---|---|---|---|---|---|---|
| Name: | 21627 Wynn (SPS) | | | | | |
| Facility: | Crossroads Norridgewock, ME | | | | | |
| Date: | 01.02.18 (Picked up on 12.29.17) | | | | | |
| Approval: | 523415ME | | | | | |
| | | | | | | |
| Date | Ld | Truck Name | # | | Ticket | Tons |
| 01.02.18 | 1 | SWS | 503 | | 914169 | 4.73 |
| 01.02.18 | 2 | SWS | 506 | | 914173 | 1.82 |
| 01.02.18 | 2 | Z Total | | | | 6.55 |

WASTE MANAGEMENT

WM Disp Services of Maine
357 Mercer Rd
Norridgewock, ME, 04957
Ph: (207) 634-2714

Original 1621599

Ticket# 914169

| | | | | | |
|---|---|---|---|---|---|
| Customer Name | CHARTERCONTRACTING CHARTER | Carrier | NRES NON-RESIDENT | | |
| Ticket Date | 01/02/2018 | Vehicle# | SHIPYARD503 | Volume | |
| Payment Type | Credit Account | Container | | | |
| Manual Ticket# | | Driver | | | |
| Hauling Ticket# | | Check# | | | |
| Route | | Billing # | 0113697 | | |
| State Waste Code | | Gen EPA ID | NOT REQUIRED | | |
| Manifest | 53630 | PO | | | |
| Destination | PH8 | Profile | 523415ME (ASBESTOS CONTAMINATED SE | | |
| Grid | M42 | Generator | NE-WYNNMALLC WYNN MA, LLC | | |

| | Time | Scale | Operator | Inbound | | |
|---|---|---|---|---|---|---|
| In | 01/02/2018 08:01:21 | Scale1 Inboun | 1files | | Gross | 49680 lb |
| Out | 01/02/2018 09:38:23 | Scale 2 Out | 1files | | Tare | 40220 lb |
| | | | | | Net | 9460 lb |
| | | | | | Tons | 4.73 |

Comments

| | Product | LD% | QTY | UOM | Rate | Fee | Amount | Origin |
|---|---|---|---|---|---|---|---|---|
| 1 | Asb Non Fri-Tons-A | 100 | 4.73 | Tons | | | | MA |
| 2 | EVF-P14-Environmen | 100 | | % | | | | |
| 3 | RCR-P-Regulatory C | 100 | | % | | | | |
| 4 | LFS4-LANDFILL FIXE | 100 | | % | | | | |

Total Fees
Total Ticket

OUT-OF-STATE SOLID WASTE TRANSPORTER DECLARATION: I certify under penalty of perjury that the information provided is true and correct to the best of my knowledge and belief.
TO THE BEST OF MY KNOWLEDGE THIS TRUCK CONTAINS NO HAZARDUS OR UNACCEPTABLE WASTE.

Driver's Signature _____

404WM-N

503

# WASTE SHIPMENT RECORD/ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only

Elevation_____

North_____ East_____

**Generator**

| 1-A. Special Waste Profile Number | NESHAP Notified | WSR Number |
|---|---|---|
| 523415ME | _____YES _____NO | 53630 |

| | |
|---|---|
| 1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code)<br>Wynn MA, LLC attn: Robert DeSalvio<br>1 Horizon Way Everett, MA 02149 | 1-C. Generator's Phone Number<br>857-770-7000 |
| 1-D. Work Site Address<br>Wynn MA, LLC<br>1 Horizon Way Everett, MA 02149 | 1-E. 24 Hour Emergency Response Telephone Number |
| 2. Operator's Name and Complete Mailing Address<br>Charter Contracting LLC<br>500 Harrison Ave. Boston, MA 02118 | Operator's Phone Number<br>857-246-6801 |
| 3. Waste Disposal Site (WDS) Name and Complete Mailing Address<br>WM Disposal Services of ME - Crossroads<br>357 Mercer Road<br>Norridgewock, ME 04957 | WDS Phone Number<br>207-634-2714 |
| 4. Name and Address of Responsible Agency | |

| 5. Description of Materials | | 6. Containers No. | Type | 7. Total Quantity yd3 |
|---|---|---|---|---|
| friable asbestos | RQ, NA2212, Asbestos, 9, PGIII | | | |
| non-friable asbestos | Cat I _____ Cat II _____ | | | |

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

| Printed/Typed Name and Title | Signature | Date |
|---|---|---|
| Chris Gordon Pres Wynn Dev. | Chris Gordon | 12/27/2017 |

**Transporter**

| | |
|---|---|
| 10. Transporter 1 Company Name<br>Shipyard Waste<br>Complete Mailing Address<br>434 Dow Hwy<br>Eliot ME<br>Telephone Number (including area code)<br>(207) 439-5574 | Driver Signature<br>[signature]<br>Printed Name and Title<br>Roy Klember Driver<br>Date 12/29/17 |
| 11. Transporter 2 Company Name<br>Complete Mailing Address<br>Telephone Number (including area code) | Driver Signature<br>Printed Name and Title<br>Date |

**Disposal Site**

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12. #914169 M42 286

| Printed/Typed Name and Title | Signature | Date |
|---|---|---|
| Lilly Files Scales | WMDSM Lt | 1-2-2018 |

WHITE - Disposal Site CANARY - Generator (To be mailed by Disposal Site) PINK - Transporter GOLD - Generator (To be taken prior to disposal)

DCE-230-97

WASTE MANAGEMENT

WM Disp Services of Maine
357 Mercer Rd
Norridgewock, ME, 04957
Ph: (207) 634-2714

Original 1621600

Ticket# 914173

| | | | | | |
|---|---|---|---|---|---|
| Customer Name | CHARTERCONTRACTING CHARTER | Carrier | NRES NON-RESIDENT | | |
| Ticket Date | 01/02/2018 | Vehicle# | SHIPYARD506 | Volume | |
| Payment Type | Credit Account | Container | | | |
| Manual Ticket# | | Driver | | | |
| Hauling Ticket# | | Check# | | | |
| Route | | Billing # | 0113697 | | |
| State Waste Code | | Gen EPA ID | NOT REQUIRED | | |
| Manifest | 53633 | PO | | | |
| Destination | PH8 | Profile | 523415ME (ASBESTOS CONTAMINATED SE | | |
| Grid | M42 | Generator | NE-WYNNMALLC WYNN MA, LLC | | |

| | Time | Scale | Operator | Inbound | | |
|---|---|---|---|---|---|---|
| In | 01/02/2018 08:10:56 | Scale1 Inboun | 1files | | Gross | 47540 lb |
| Out | 01/02/2018 09:39:48 | Scale 2 Out | 1files | | Tare | 43900 lb |
| | | | | | Net | 3640 lb |
| | | | | | Tons | 1.82 |

Comments

| | Product | LD% | Qty | UOM | Rate | Fee | Amount | Origin |
|---|---|---|---|---|---|---|---|---|
| 1 | Asb Non Fri-Tons-A | 100 | 1.82 | Tons | | | | MA |
| 2 | EVF-P14-Environmen | 100 | | % | | | | MA |
| 3 | RCR-P-Regulatory C | 100 | | % | | | | MA |
| 4 | LFS4-LANDFILL FIXE | 100 | | % | | | | MA |

Total Fees
Total Ticket

OUT-OF-STATE SOLID WASTE TRANSPORTER DECLARATION: I certify under penalty of perjury that the information provided is true and correct to the best of my knowledge and belief.
TO THE BEST OF MY KNOWLEDGE THIS TRUCK CONTAINS NO HAZARDUS OR UNACCEPTABLE WASTE.

404WM-N

506

# WASTE SHIPMENT RECORD/ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only

Elevation_____

North_____ East_____

**Generator**

| 1-A. Special Waste Profile Number | NESHAP Notified | WSR Number |
|---|---|---|
| 523415ME | _____YES _____NO | 53633 |

| | |
|---|---|
| 1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code)<br>Wynn MA, LLC attn: Robert DeSalivio<br>1 Horizon Way Everett, MA 02149 | 1-C. Generator's Phone Number<br>857-770-7000 |
| 1-D. Work Site Address<br>Wynn MA, LLC<br>1 Horizon Way Everett, MA 02149 | 1-E. 24 Hour Emergency Response Telephone Number |
| 2. Operator's Name and Complete Mailing Address<br>Charter Contracting LLC<br>500 Harrison Ave. Boston, MA 02118 | Operator's Phone Number<br>857-246-6801 |
| 3. Waste Disposal Site (WDS) Name and Complete Mailing Address<br>WM Disposal Services of ME - Crossroads<br>357 Mercer Road<br>Norridgewock, ME 04957 | WDS Phone Number<br>207-634-2714 |

4. Name and Address of Responsible Agency

| 5. Description of Materials | | 6. Containers No. | Type | 7. Total Quantity yd3 |
|---|---|---|---|---|
| friable asbestos | RQ, NA2212, Asbestos, 9, PGIII | | | |
| non-friable asbestos X | Cat I _____ Cat II _____ | 1 | | 15 Tonest |

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

| Printed/Typed Name and Title | Signature | Date |
|---|---|---|
| Chris Gorn, Pres Wynn DEV | [signature] | 12/27/2017 |

**Transporter**

| | |
|---|---|
| 10. Transporter 1 Company Name<br>Ship Yard waste<br>Complete Mailing Address<br>RT 236 Eliot ME<br>Telephone Number (including area code)<br>207 439-5574 | Driver Signature<br>[signature]<br>Printed Name and Title<br>Douglas Lipert<br>Date 12-29-17 |
| 11. Transporter 2 Company Name<br>Complete Mailing Address<br>Telephone Number (including area code) | Driver Signature<br>Printed Name and Title<br>Date |

**Disposal Site**

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12. M42 286 #914173

| Printed/Typed Name and Title | Signature | Date |
|---|---|---|
| Lilly Files Scales | WMD Smith | 1-2-2018 |

WHITE - Disposal Site CANARY - Generator (To be mailed by Disposal Site) PINK - Transporter GOLD - Generator (To be taken prior to disposal)

DCE-230-97

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Charter | | | | |
| Name: | 21627 Wynn (SPS) | | | | | |
| Facility: | Crossroads Norridgewock, ME | | | | | |
| Date: | 01.30.18 | | | | | |
| Approval: | 523415ME | | | | | |
| | | | | | | |
| Date | Ld | Truck Name | # | | Ticket | Tons |
| 01.30.18 | 1 | SWS | x | *Tipped 01.31.18 | 917111 | 1.35 |
| 01.30.18 | 1 | Z Total | | | | 1.35 |

WASTE MANAGEMENT

WM Disp Services of Maine
357 Mercer Rd
Norridgewock, ME, 04957
Ph: (207) 634-2714

Original 1620559

Ticket# 917111

| | | | | |
|---|---|---|---|---|
| Customer Name | CHARTERCONTRACTING CHARTER | Carrier | RES RESIDENT | |
| Ticket Date | 01/31/2018 | Vehicle# | SHIPYARD | Volume |
| Payment Type | Credit Account | Container | | |
| Manual Ticket# | | Driver | | |
| Hauling Ticket# | | Check# | | |
| Route | | Billing # | 0113697 | |
| State Waste Code | | Gen EPA ID | NOT REQUIRED | |
| Manifest | 53629 | PO | | |
| Destination | PH8 | Profile | 523415ME (ASBESTOS CONTAMINATED SE | |
| Grid | 040 | Generator | NE-WYNNMALLC WYNN MA, LLC | |

| | Time | Scale | Operator | Inbound | | |
|---|---|---|---|---|---|---|
| In | 01/31/2018 08:43:04 | Scale1 Inboun | 1files | | Gross | 37480 lb |
| Out | 01/31/2018 09:02:10 | Scale 2 Out | 1files | | Tare | 34780 lb |
| | | | | | Net | 2700 lb |
| | | | | | Tons | 1.35 |

Comments

| | Product | LD% | Qty | UOM | Rate | Fee | Amount | Origin |
|---|---|---|---|---|---|---|---|---|
| 1 | Asb Non Fri-Tons-A | 100 | 1.35 | Tons | | | | MA |
| 2 | EVF-P14-Environmen | 100 | | % | | | | MA |
| 3 | RCR-P-Regulatory C | 100 | | % | | | | MA |
| 4 | LFS4-LANDFILL FIXE | 100 | | % | | | | MA |

Total Fees
Total Ticket

OUT-OF-STATE SOLID WASTE TRANSPORTER DECLARATION: I certify under penalty of perjury that the information provided is true and correct to the best of my knowledge and belief.
TO THE BEST OF MY KNOWLEDGE THIS TRUCK CONTAINS NO HAZARDUS OR UNACCEPTABLE WASTE.

Driver's Signature _____

404WM-N

# WASTE SHIPMENT RECORD / ASBESTOS MANIFEST

(See Reverse for Instructions)

For Disposal Site Use Only

Elevation_____

North_____ East_____

**Generator**

| 1-A. Special Waste Profile Number | NESHAP Notified | WSR Number |
|---|---|---|
| 523415ME | _____YES _____NO | 53629 |

1-B. Generator Name, Contact Name, and Complete Mailing Address (including Zip Code)
Wynn MA, LLC attn: Robert DeSalvio
1 Horizon Way Everett, MA 02149

1-C. Generator's Phone Number
857-770-7000

1-D. Work Site Address
Wynn MA, LLC
1 Horizon Way Everett, MA 02149

1-E. 24 Hour Emergency Response Telephone Number

2. Operator's Name and Complete Mailing Address
Charter Contracting LLC
500 Harrison Ave. Boston, MA 02118

Operator's Phone Number
857-246-6801

3. Waste Disposal Site (WDS) Name and Complete Mailing Address
WM Disposal Services of ME - Crossroads
357 Mercer Road
Norridgewock, ME 04957

WDS Phone Number
207-634-2714

4. Name and Address of Responsible Agency

| 5. Description of Materials | | 6. Containers No. | Type | 7. Total Quantity yd3 |
|---|---|---|---|---|
| friable asbestos | RQ, NA2212, Asbestos, 9, PGIII | | | |
| non-friable asbestos | Cat I _____ Cat II _____ | | | |

8. Special Handling Instructions and Additional Information
24 HOUR NOTICE GIVEN PRIOR TO DISPOSAL, MUST BE BURIED

9. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations. I hereby certify that the asbestos is not contaminated with hazardous, PCB, and/or any special waste.

| Printed/Typed Name and Title | Signature | Date |
|---|---|---|
| Chris Gordon, DPES Wynn | Chris Gordon | 1/29/18 |

**Transporter**

10. Transporter 1 Company Name
Shipyard Waste Solutions

Complete Mailing Address
434 Dow Highway Eliot ME

Telephone Number (including area code)
1 800 Demo Can

Driver Signature

Printed Name and Title
Lance Reynolds Driver

Date 1-30-18

11. Transporter 2 Company Name
SWS

Complete Mailing Address
434 Dow Highway Eliot, ME

Telephone Number (including area code)
207-439-5571

Driver Signature

Printed Name and Title
Gary Munn Driver

Date 1/31/18

**Disposal Site**

12. Discrepancy Indication Space

13. Waste Disposal Site Owner or Operator

Certification of receipt of asbestos materials covered by this manifest except as noted in Item 12. #917111 Q40 290

| Printed/Typed Name and Title | Signature | Date |
|---|---|---|
| Gillian Scales | [illegible] | 01-31-18 |

WHITE - Disposal Site | CANARY - Generator (To be mailed by Disposal Site) | PINK - Transporter | GOLD - Generator (To be taken prior to disposal)

DCE-230-97

# APPENDIX G

Water Treatment System Analytical Data

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1710460**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 3:10 pm, Nov 14, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
Alpha Analytical - Westboro, MA Arsenic, Lead

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

## SAMPLE RECEIPT

The following samples were received on October 18, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, EPH, and SVOA were analyzed for a subset of the required MCP list per the client's request.**

**Revision 1 November 14, 2017: This report has been revised to include PCB results, updated methods for Arsenic and Lead, reporting of Bis (2-ethylhexyl) phthalate only for SVOA and removal of Turbidity results per client request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1710460-01 | Wynn-CC-171018-Inf-1 | Aqueous | 8270D |
| 1710460-02 | Wynn-CC-171018-Inf-2 | Aqueous | §, 6010C, 7470A |
| 1710460-03 | Wynn-CC-171018-Inf-3 | Aqueous | 8082A, EPH8270, MADEP-EPH |
| 1710460-04 | Wynn-CC-171018-Inf-4 | Aqueous | 2540D, 9040 |
| 1710460-05 | Wynn-CC-171018-Eff-1 | Aqueous | 8082A, 8270D |
| 1710460-06 | Wynn-CC-171018-Eff-2 | Aqueous | §, 6010C, 7470A, SUB |
| 1710460-07 | Wynn-CC-171018-Eff-3 | Aqueous | 2540D, 9040 |
| 1710460-08 | Wynn-CC-171018-Eff-4 | Aqueous | EPH8270, MADEP-EPH |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

## PROJECT NARRATIVE

**8270D Semi-Volatile Organic Compounds**

| | |
|---|---|
| 1710460-01 | **Surrogate recovery(ies) above upper control limit (S+).**<br>2,4,6-Tribromophenol (115% @ 15-110%) |
| C7J0395-CCV1 | **Calibration required quadratic regression (Q).**<br>2,4-Dinitrophenol (104% @ 80-120%) |
| C7J0396-CCV1 | **Calibration required quadratic regression (Q).**<br>2,4-Dinitrophenol (98% @ 80-120%) |
| CJ72424-BS1 | **Blank Spike recovery is above upper control limit (B+).**<br>2,4,6-Tribromophenol (113% @ 15-110%) |
| CJ72424-BSD1 | **Blank Spike recovery is above upper control limit (B+).**<br>2,4,6-Tribromophenol (124% @ 15-110%), p-Terphenyl-d14 (134% @ 30-130%) |
| CJ72424-BSD1 | **Relative percent difference for duplicate is outside of criteria (D+).**<br>2,4-Dinitrophenol (22% @ 20%), 2-Methylphenol (21% @ 20%), 3+4-Methylphenol (22% @ 20%), 4-Nitrophenol (22% @ 20%), Phenol (21% @ 20%) |

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Sediment Remediation ESS Laboratory Work Order: 1710460

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1710460-01 through 1710460-08**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (X) Other: Aqueous

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| ( ) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | ( ) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | ( ) 6020 Metals CAM III D | (X) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes (X) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes ( ) No (X)* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (X)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard Date: October 26, 2017
Printed Name: Laurel Stoddard Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-1
Date Sampled: 10/18/17 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/24/17 18:10

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **bis(2-Ethylhexyl)phthalate** | **450** (56.1) | | 8270D | | 10 | 10/25/17 20:36 | C7J0395 | CJ72424 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *76 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *115 %* | *S+* | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *78 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *95 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *62 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *93 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *84 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *90 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-2
Date Sampled: 10/18/17 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| **Arsenic** | **151** (100) | | 6010C | | 4 | KJK | 10/24/17 12:42 | 50 | 25 | CJ71842 |
| **Lead** | **18** (5) | | § | | 1 | SUB | 11/08/17 9:51 | 1 | 1 | CK71430 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 10/20/17 13:51 | 20 | 40 | CJ71843 |
| Vanadium | ND (20.0) | | 6010C | | 2 | KJK | 10/23/17 17:58 | 50 | 25 | CJ71842 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-3
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-03
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| **Aroclor 1242 [2C]** | **0.15** (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| **Aroclor 1254** | **0.15** (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| **Aroclor 1260 [2C]** | **0.05** (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:47 | | CJ73001 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *73 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *69 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *69 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-3
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/23/17 15:02

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **C9-C18 Aliphatics1** | **125** (93) | | MADEP-EPH | | 1 | ZLC | 10/24/17 2:43 | C7J0339 | CJ72304 |
| **C19-C36 Aliphatics1** | **365** (93) | | MADEP-EPH | | 1 | ZLC | 10/24/17 2:43 | C7J0339 | CJ72304 |
| **C11-C22 Unadjusted Aromatics1** | **387** (93.5) | | EPH8270 | | 1 | VSC | 10/23/17 18:28 | C7J0345 | CJ72304 |
| **C11-C22 Aromatics1,2** | **387** (93.5) | | EPH8270 | | | VSC | 10/23/17 18:28 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CJ72304 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *62 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *100 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *113 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *93 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Inf-4
Date Sampled: 10/18/17 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-04
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **6.90** (N/A) | | 9040 | | 1 | BCA | 10/18/17 22:15 | S.U. | CJ71837 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.2 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **50** (5) | | 2540D | | 1 | JLK | 10/18/17 22:28 | mg/L | CJ71828 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-1
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 10/31/17 21:06 | | CJ73001 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *85 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *91 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *82 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-1
Date Sampled: 10/18/17 12:10
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/24/17 18:10

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **bis(2-Ethylhexyl)phthalate** | **11.3** (6.0) | | 8270D | | 1 | 10/25/17 17:04 | C7J0395 | CJ72424 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *62 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *80 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *67 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *69 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *64 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *70 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *69 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *41 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-2
Date Sampled: 10/18/17 12:10
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: General Subbed Prep

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| **Arsenic** | **9** (5) | | SUB | | 1 | SUB | 11/08/17 9:55 | 1 | 1 | CK71430 |
| Lead | ND (5) | | § | | 1 | SUB | 11/08/17 9:55 | 1 | 1 | CK71430 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 10/20/17 13:53 | 20 | 40 | CJ71843 |
| Vanadium | ND (20.0) | | 6010C | | 2 | KJK | 10/23/17 18:03 | 50 | 25 | CJ71842 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-3
Date Sampled: 10/18/17 12:15
Percent Solids: N/A

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-07
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **8.26** (N/A) | | 9040 | | 1 | BCA | 10/18/17 22:15 | S.U. | CJ71837 |
| **pH Sample Temp** | **Aqueous pH measured in water at 16.2 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **22** (5) | | 2540D | | 1 | JLK | 10/18/17 22:28 | mg/L | CJ71828 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171018-Eff-4
Date Sampled: 10/18/17 12:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710460
ESS Laboratory Sample ID: 1710460-08
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/23/17 15:02

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 10/24/17 3:31 | C7J0339 | CJ72304 |
| C19-C36 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 10/24/17 3:31 | C7J0339 | CJ72304 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | VSC | 10/23/17 19:02 | C7J0345 | CJ72304 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | VSC | 10/23/17 19:02 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CJ72304 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *70 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *98 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *109 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *94 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CJ71842 - 3005A/200.7** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 25.0 | ug/L | | | | | | | |
| Vanadium | ND | 10.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 250 | 25.0 | ug/L | 250.0 | | 100 | 80-120 | | | |
| Vanadium | 255 | 10.0 | ug/L | 250.0 | | 102 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Arsenic | 257 | 25.0 | ug/L | 250.0 | | 103 | 80-120 | 3 | 20 | |
| Vanadium | 257 | 10.0 | ug/L | 250.0 | | 103 | 80-120 | 0.8 | 20 | |
| **Batch CJ71843 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 5.74 | 0.20 | ug/L | 6.000 | | 96 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 6.01 | 0.20 | ug/L | 6.000 | | 100 | 80-120 | 5 | 20 | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CJ73001 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *ND* | | ug/L | *0.05000* | | *84* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *ND* | | ug/L | *0.05000* | | *67* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *ND* | | ug/L | *0.05000* | | *62* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *ND* | | ug/L | *0.05000* | | *62* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CJ73001 - 3510C** | | | | | | | | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.89 | 0.05 | ug/L | 1.000 | | 89 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.72 | 0.05 | ug/L | 1.000 | | 72 | 40-140 | | | |
| Aroclor 1260 | 0.95 | 0.05 | ug/L | 1.000 | | 95 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.74 | 0.05 | ug/L | 1.000 | | 74 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0515* | | ug/L | *0.05000* | | *103* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0401* | | ug/L | *0.05000* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0354* | | ug/L | *0.05000* | | *71* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0320* | | ug/L | *0.05000* | | *64* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.91 | 0.05 | ug/L | 1.000 | | 91 | 40-140 | 2 | 20 | |
| Aroclor 1016 [2C] | 0.76 | 0.05 | ug/L | 1.000 | | 76 | 40-140 | 5 | 20 | |
| Aroclor 1260 | 1.01 | 0.05 | ug/L | 1.000 | | 101 | 40-140 | 6 | 20 | |
| Aroclor 1260 [2C] | 0.80 | 0.05 | ug/L | 1.000 | | 80 | 40-140 | 7 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0519* | | ug/L | *0.05000* | | *104* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0383* | | ug/L | *0.05000* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0379* | | ug/L | *0.05000* | | *76* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0327* | | ug/L | *0.05000* | | *65* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CJ72424 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 10.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | ND | 10.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | ND | 10.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | ND | 5.0 | ug/L | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 10.0 | ug/L | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 10.0 | ug/L | | | | | | | |
| 2,4-Dichlorophenol | ND | 10.0 | ug/L | | | | | | | |
| 2,4-Dimethylphenol | ND | 50.0 | ug/L | | | | | | | |
| 2,4-Dinitrophenol | ND | 50.0 | ug/L | | | | | | | |
| 2,4-Dinitrotoluene | ND | 10.0 | ug/L | | | | | | | |
| 2,6-Dinitrotoluene | ND | 10.0 | ug/L | | | | | | | |
| 2-Chloronaphthalene | ND | 10.0 | ug/L | | | | | | | |
| 2-Chlorophenol | ND | 10.0 | ug/L | | | | | | | |
| 2-Methylnaphthalene | ND | 10.0 | ug/L | | | | | | | |
| 2-Methylphenol | ND | 10.0 | ug/L | | | | | | | |
| 2-Nitrophenol | ND | 10.0 | ug/L | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 20.0 | ug/L | | | | | | | |
| 3+4-Methylphenol | ND | 20.0 | ug/L | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 10.0 | ug/L | | | | | | | |
| 4-Chloroaniline | ND | 20.0 | ug/L | | | | | | | |
| 4-Nitrophenol | ND | 50.0 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CJ72424 - 3520C** | | | | | | | | | | |
| Acenaphthene | ND | 10.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 10.0 | ug/L | | | | | | | |
| Acetophenone | ND | 10.0 | ug/L | | | | | | | |
| Aniline | ND | 10.0 | ug/L | | | | | | | |
| Anthracene | ND | 10.0 | ug/L | | | | | | | |
| Azobenzene | ND | 20.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 10.0 | ug/L | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 10.0 | ug/L | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 10.0 | ug/L | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| Butylbenzylphthalate | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzofuran | ND | 10.0 | ug/L | | | | | | | |
| Diethylphthalate | ND | 10.0 | ug/L | | | | | | | |
| Dimethylphthalate | ND | 10.0 | ug/L | | | | | | | |
| Di-n-butylphthalate | ND | 10.0 | ug/L | | | | | | | |
| Di-n-octylphthalate | ND | 10.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 10.0 | ug/L | | | | | | | |
| Hexachlorobenzene | ND | 10.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | ND | 10.0 | ug/L | | | | | | | |
| Hexachloroethane | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 10.0 | ug/L | | | | | | | |
| Isophorone | ND | 10.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Nitrobenzene | ND | 10.0 | ug/L | | | | | | | |
| N-Nitrosodimethylamine | ND | 10.0 | ug/L | | | | | | | |
| Pentachlorophenol | ND | 50.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 10.0 | ug/L | | | | | | | |
| Phenol | ND | 10.0 | ug/L | | | | | | | |
| Pyrene | ND | 10.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *56.9* | | ug/L | *100.0* | | *57* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *105* | | ug/L | *150.0* | | *70* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *85.0* | | ug/L | *150.0* | | *57* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *63.3* | | ug/L | *100.0* | | *63* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *74.4* | | ug/L | *150.0* | | *50* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *63.0* | | ug/L | *100.0* | | *63* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *84.8* | | ug/L | *150.0* | | *57* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *74.0* | | ug/L | *100.0* | | *74* | *30-130* | | | |
| **LCS** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CJ72424 - 3520C** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 85.1 | 10.0 | ug/L | 100.0 | | 85 | 40-140 | | | |
| 1,2-Dichlorobenzene | 78.0 | 10.0 | ug/L | 100.0 | | 78 | 40-140 | | | |
| 1,3-Dichlorobenzene | 76.7 | 10.0 | ug/L | 100.0 | | 77 | 40-140 | | | |
| 1,4-Dichlorobenzene | 76.2 | 10.0 | ug/L | 100.0 | | 76 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 99.0 | 10.0 | ug/L | 100.0 | | 99 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 95.0 | 10.0 | ug/L | 100.0 | | 95 | 30-130 | | | |
| 2,4-Dichlorophenol | 83.5 | 10.0 | ug/L | 100.0 | | 84 | 30-130 | | | |
| 2,4-Dimethylphenol | 74.2 | 50.0 | ug/L | 100.0 | | 74 | 30-130 | | | |
| 2,4-Dinitrophenol | 84.2 | 50.0 | ug/L | 100.0 | | 84 | 30-130 | | | |
| 2,4-Dinitrotoluene | 89.3 | 10.0 | ug/L | 100.0 | | 89 | 40-140 | | | |
| 2,6-Dinitrotoluene | 94.8 | 10.0 | ug/L | 100.0 | | 95 | 40-140 | | | |
| 2-Chloronaphthalene | 84.0 | 10.0 | ug/L | 100.0 | | 84 | 40-140 | | | |
| 2-Chlorophenol | 72.3 | 10.0 | ug/L | 100.0 | | 72 | 30-130 | | | |
| 2-Methylnaphthalene | 83.0 | 10.0 | ug/L | 100.0 | | 83 | 40-140 | | | |
| 2-Methylphenol | 75.0 | 10.0 | ug/L | 100.0 | | 75 | 30-130 | | | |
| 2-Nitrophenol | 78.4 | 10.0 | ug/L | 100.0 | | 78 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 82.8 | 20.0 | ug/L | 100.0 | | 83 | 40-140 | | | |
| 3+4-Methylphenol | 149 | 20.0 | ug/L | 200.0 | | 75 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 95.8 | 10.0 | ug/L | 100.0 | | 96 | 40-140 | | | |
| 4-Chloroaniline | 76.9 | 20.0 | ug/L | 100.0 | | 77 | 40-140 | | | |
| 4-Nitrophenol | 82.4 | 50.0 | ug/L | 100.0 | | 82 | 30-130 | | | |
| Acenaphthene | 86.6 | 10.0 | ug/L | 100.0 | | 87 | 40-140 | | | |
| Acenaphthylene | 86.3 | 10.0 | ug/L | 100.0 | | 86 | 40-140 | | | |
| Acetophenone | 89.6 | 10.0 | ug/L | 100.0 | | 90 | 40-140 | | | |
| Aniline | 77.0 | 10.0 | ug/L | 100.0 | | 77 | 40-140 | | | |
| Anthracene | 88.2 | 10.0 | ug/L | 100.0 | | 88 | 40-140 | | | |
| Azobenzene | 88.4 | 20.0 | ug/L | 100.0 | | 88 | 40-140 | | | |
| Benzo(a)anthracene | 92.0 | 10.0 | ug/L | 100.0 | | 92 | 40-140 | | | |
| Benzo(a)pyrene | 92.5 | 10.0 | ug/L | 100.0 | | 93 | 40-140 | | | |
| Benzo(b)fluoranthene | 101 | 10.0 | ug/L | 100.0 | | 101 | 40-140 | | | |
| Benzo(g,h,i)perylene | 91.3 | 10.0 | ug/L | 100.0 | | 91 | 40-140 | | | |
| Benzo(k)fluoranthene | 95.0 | 10.0 | ug/L | 100.0 | | 95 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 84.9 | 10.0 | ug/L | 100.0 | | 85 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 78.3 | 10.0 | ug/L | 100.0 | | 78 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 79.3 | 10.0 | ug/L | 100.0 | | 79 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 117 | 6.0 | ug/L | 100.0 | | 117 | 40-140 | | | |
| Butylbenzylphthalate | 112 | 10.0 | ug/L | 100.0 | | 112 | 40-140 | | | |
| Chrysene | 92.0 | 10.0 | ug/L | 100.0 | | 92 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 94.0 | 10.0 | ug/L | 100.0 | | 94 | 40-140 | | | |
| Dibenzofuran | 88.7 | 10.0 | ug/L | 100.0 | | 89 | 40-140 | | | |
| Diethylphthalate | 94.6 | 10.0 | ug/L | 100.0 | | 95 | 40-140 | | | |
| Dimethylphthalate | 92.9 | 10.0 | ug/L | 100.0 | | 93 | 40-140 | | | |
| Di-n-butylphthalate | 107 | 10.0 | ug/L | 100.0 | | 107 | 40-140 | | | |
| Di-n-octylphthalate | 116 | 10.0 | ug/L | 100.0 | | 116 | 40-140 | | | |
| Fluoranthene | 100 | 10.0 | ug/L | 100.0 | | 100 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CJ72424 - 3520C** | | | | | | | | | | |
| Fluorene | 91.5 | 10.0 | ug/L | 100.0 | | 92 | 40-140 | | | |
| Hexachlorobenzene | 96.8 | 10.0 | ug/L | 100.0 | | 97 | 40-140 | | | |
| Hexachlorobutadiene | 90.8 | 10.0 | ug/L | 100.0 | | 91 | 40-140 | | | |
| Hexachloroethane | 75.7 | 5.0 | ug/L | 100.0 | | 76 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 93.9 | 10.0 | ug/L | 100.0 | | 94 | 40-140 | | | |
| Isophorone | 81.1 | 10.0 | ug/L | 100.0 | | 81 | 40-140 | | | |
| Naphthalene | 85.1 | 10.0 | ug/L | 100.0 | | 85 | 40-140 | | | |
| Nitrobenzene | 84.4 | 10.0 | ug/L | 100.0 | | 84 | 40-140 | | | |
| N-Nitrosodimethylamine | 74.2 | 10.0 | ug/L | 100.0 | | 74 | 40-140 | | | |
| Pentachlorophenol | 96.4 | 50.0 | ug/L | 100.0 | | 96 | 30-130 | | | |
| Phenanthrene | 89.2 | 10.0 | ug/L | 100.0 | | 89 | 40-140 | | | |
| Phenol | 70.3 | 10.0 | ug/L | 100.0 | | 70 | 30-130 | | | |
| Pyrene | 96.4 | 10.0 | ug/L | 100.0 | | 96 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *83.4* | | ug/L | *100.0* | | *83* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *169* | | ug/L | *150.0* | | *113* | *15-110* | | | *B+* |
| *Surrogate: 2-Chlorophenol-d4* | *116* | | ug/L | *150.0* | | *78* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *96.3* | | ug/L | *100.0* | | *96* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *94.1* | | ug/L | *150.0* | | *63* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *93.8* | | ug/L | *100.0* | | *94* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *116* | | ug/L | *150.0* | | *77* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *111* | | ug/L | *100.0* | | *111* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 94.5 | 10.0 | ug/L | 100.0 | | 94 | 40-140 | 10 | 20 | |
| 1,2-Dichlorobenzene | 90.4 | 10.0 | ug/L | 100.0 | | 90 | 40-140 | 15 | 20 | |
| 1,3-Dichlorobenzene | 88.9 | 10.0 | ug/L | 100.0 | | 89 | 40-140 | 15 | 20 | |
| 1,4-Dichlorobenzene | 88.3 | 10.0 | ug/L | 100.0 | | 88 | 40-140 | 15 | 20 | |
| 2,4,5-Trichlorophenol | 113 | 10.0 | ug/L | 100.0 | | 113 | 30-130 | 13 | 20 | |
| 2,4,6-Trichlorophenol | 101 | 10.0 | ug/L | 100.0 | | 101 | 30-130 | 6 | 20 | |
| 2,4-Dichlorophenol | 97.7 | 10.0 | ug/L | 100.0 | | 98 | 30-130 | 16 | 20 | |
| 2,4-Dimethylphenol | 88.5 | 50.0 | ug/L | 100.0 | | 88 | 30-130 | 18 | 20 | |
| 2,4-Dinitrophenol | 105 | 50.0 | ug/L | 100.0 | | 105 | 30-130 | 22 | 20 | D+ |
| 2,4-Dinitrotoluene | 108 | 10.0 | ug/L | 100.0 | | 108 | 40-140 | 19 | 20 | |
| 2,6-Dinitrotoluene | 111 | 10.0 | ug/L | 100.0 | | 111 | 40-140 | 16 | 20 | |
| 2-Chloronaphthalene | 88.7 | 10.0 | ug/L | 100.0 | | 89 | 40-140 | 5 | 20 | |
| 2-Chlorophenol | 86.2 | 10.0 | ug/L | 100.0 | | 86 | 30-130 | 18 | 20 | |
| 2-Methylnaphthalene | 96.1 | 10.0 | ug/L | 100.0 | | 96 | 40-140 | 15 | 20 | |
| 2-Methylphenol | 92.3 | 10.0 | ug/L | 100.0 | | 92 | 30-130 | 21 | 20 | D+ |
| 2-Nitrophenol | 90.9 | 10.0 | ug/L | 100.0 | | 91 | 30-130 | 15 | 20 | |
| 3,3´-Dichlorobenzidine | 92.7 | 20.0 | ug/L | 100.0 | | 93 | 40-140 | 11 | 20 | |
| 3+4-Methylphenol | 186 | 20.0 | ug/L | 200.0 | | 93 | 30-130 | 22 | 20 | D+ |
| 4-Bromophenyl-phenylether | 104 | 10.0 | ug/L | 100.0 | | 104 | 40-140 | 8 | 20 | |
| 4-Chloroaniline | 91.2 | 20.0 | ug/L | 100.0 | | 91 | 40-140 | 17 | 20 | |
| 4-Nitrophenol | 103 | 50.0 | ug/L | 100.0 | | 103 | 30-130 | 22 | 20 | D+ |
| Acenaphthene | 95.3 | 10.0 | ug/L | 100.0 | | 95 | 40-140 | 10 | 20 | |
| Acenaphthylene | 95.0 | 10.0 | ug/L | 100.0 | | 95 | 40-140 | 10 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CJ72424 - 3520C** | | | | | | | | | | |
| Acetophenone | 105 | 10.0 | ug/L | 100.0 | | 105 | 40-140 | 16 | 20 | |
| Aniline | 92.7 | 10.0 | ug/L | 100.0 | | 93 | 40-140 | 18 | 20 | |
| Anthracene | 98.6 | 10.0 | ug/L | 100.0 | | 99 | 40-140 | 11 | 20 | |
| Azobenzene | 96.3 | 20.0 | ug/L | 100.0 | | 96 | 40-140 | 9 | 20 | |
| Benzo(a)anthracene | 103 | 10.0 | ug/L | 100.0 | | 103 | 40-140 | 11 | 20 | |
| Benzo(a)pyrene | 104 | 10.0 | ug/L | 100.0 | | 104 | 40-140 | 12 | 20 | |
| Benzo(b)fluoranthene | 111 | 10.0 | ug/L | 100.0 | | 111 | 40-140 | 9 | 20 | |
| Benzo(g,h,i)perylene | 106 | 10.0 | ug/L | 100.0 | | 106 | 40-140 | 15 | 20 | |
| Benzo(k)fluoranthene | 105 | 10.0 | ug/L | 100.0 | | 105 | 40-140 | 10 | 20 | |
| bis(2-Chloroethoxy)methane | 94.4 | 10.0 | ug/L | 100.0 | | 94 | 40-140 | 11 | 20 | |
| bis(2-Chloroethyl)ether | 88.2 | 10.0 | ug/L | 100.0 | | 88 | 40-140 | 12 | 20 | |
| bis(2-chloroisopropyl)Ether | 90.8 | 10.0 | ug/L | 100.0 | | 91 | 40-140 | 13 | 20 | |
| bis(2-Ethylhexyl)phthalate | 128 | 6.0 | ug/L | 100.0 | | 128 | 40-140 | 10 | 20 | |
| Butylbenzylphthalate | 124 | 10.0 | ug/L | 100.0 | | 124 | 40-140 | 10 | 20 | |
| Chrysene | 102 | 10.0 | ug/L | 100.0 | | 102 | 40-140 | 11 | 20 | |
| Dibenzo(a,h)Anthracene | 109 | 10.0 | ug/L | 100.0 | | 109 | 40-140 | 15 | 20 | |
| Dibenzofuran | 99.6 | 10.0 | ug/L | 100.0 | | 100 | 40-140 | 12 | 20 | |
| Diethylphthalate | 112 | 10.0 | ug/L | 100.0 | | 112 | 40-140 | 16 | 20 | |
| Dimethylphthalate | 107 | 10.0 | ug/L | 100.0 | | 107 | 40-140 | 14 | 20 | |
| Di-n-butylphthalate | 117 | 10.0 | ug/L | 100.0 | | 117 | 40-140 | 9 | 20 | |
| Di-n-octylphthalate | 117 | 10.0 | ug/L | 100.0 | | 117 | 40-140 | 0.8 | 20 | |
| Fluoranthene | 101 | 10.0 | ug/L | 100.0 | | 101 | 40-140 | 0.3 | 20 | |
| Fluorene | 105 | 10.0 | ug/L | 100.0 | | 105 | 40-140 | 14 | 20 | |
| Hexachlorobenzene | 105 | 10.0 | ug/L | 100.0 | | 105 | 40-140 | 8 | 20 | |
| Hexachlorobutadiene | 96.8 | 10.0 | ug/L | 100.0 | | 97 | 40-140 | 6 | 20 | |
| Hexachloroethane | 87.2 | 5.0 | ug/L | 100.0 | | 87 | 40-140 | 14 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 109 | 10.0 | ug/L | 100.0 | | 109 | 40-140 | 15 | 20 | |
| Isophorone | 92.4 | 10.0 | ug/L | 100.0 | | 92 | 40-140 | 13 | 20 | |
| Naphthalene | 94.8 | 10.0 | ug/L | 100.0 | | 95 | 40-140 | 11 | 20 | |
| Nitrobenzene | 93.7 | 10.0 | ug/L | 100.0 | | 94 | 40-140 | 11 | 20 | |
| N-Nitrosodimethylamine | 82.8 | 10.0 | ug/L | 100.0 | | 83 | 40-140 | 11 | 20 | |
| Pentachlorophenol | 111 | 50.0 | ug/L | 100.0 | | 111 | 30-130 | 14 | 20 | |
| Phenanthrene | 99.4 | 10.0 | ug/L | 100.0 | | 99 | 40-140 | 11 | 20 | |
| Phenol | 86.7 | 10.0 | ug/L | 100.0 | | 87 | 30-130 | 21 | 20 | D+ |
| Pyrene | 118 | 10.0 | ug/L | 100.0 | | 118 | 40-140 | 20 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *93.2* | | ug/L | *100.0* | | *93* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *186* | | ug/L | *150.0* | | *124* | *15-110* | | | *B+* |
| *Surrogate: 2-Chlorophenol-d4* | *138* | | ug/L | *150.0* | | *92* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *98.2* | | ug/L | *100.0* | | *98* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *116* | | ug/L | *150.0* | | *77* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *102* | | ug/L | *100.0* | | *102* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *142* | | ug/L | *150.0* | | *95* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *134* | | ug/L | *100.0* | | *134* | *30-130* | | | *B+* |
| **Classical Chemistry** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CJ71828 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 32 | | mg/L | 34.10 | | 94 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CJ72304 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *37.6* | | ug/L | *50.00* | | *75* | *40-140* | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CJ72304 - 3510C** | | | | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *51.0* | | ug/L | *50.00* | | *102* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *49.7* | | ug/L | *50.00* | | *99* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *41.4* | | ug/L | *50.00* | | *83* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 343 | 100 | ug/L | 400.0 | | 86 | 40-140 | | | |
| C9-C18 Aliphatics1 | 191 | 100 | ug/L | 300.0 | | 64 | 40-140 | | | |
| Decane (C10) | 23 | 5 | ug/L | 50.00 | | 47 | 40-140 | | | |
| Docosane (C22) | 39 | 5 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Dodecane (C12) | 24 | 5 | ug/L | 50.00 | | 49 | 40-140 | | | |
| Eicosane (C20) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Hexacosane (C26) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Hexadecane (C16) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Hexatriacontane (C36) | 41 | 5 | ug/L | 50.00 | | 82 | 40-140 | | | |
| Nonadecane (C19) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | | | |
| Nonane (C9) | 19 | 5 | ug/L | 50.00 | | 37 | 30-140 | | | |
| Octacosane (C28) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Octadecane (C18) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Tetracosane (C24) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Tetradecane (C14) | 34 | 5 | ug/L | 50.00 | | 68 | 40-140 | | | |
| Triacontane (C30) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *34.5* | | ug/L | *50.00* | | *69* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 37.6 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Acenaphthene | 42.1 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Acenaphthylene | 42.7 | 5.0 | ug/L | 50.00 | | 85 | 40-140 | | | |
| Anthracene | 43.2 | 5.0 | ug/L | 50.00 | | 86 | 40-140 | | | |
| Benzo(a)anthracene | 45.0 | 5.0 | ug/L | 50.00 | | 90 | 40-140 | | | |
| Benzo(a)pyrene | 44.3 | 10.0 | ug/L | 50.00 | | 89 | 40-140 | | | |
| Benzo(b)fluoranthene | 44.1 | 5.0 | ug/L | 50.00 | | 88 | 40-140 | | | |
| Benzo(g,h,i)perylene | 44.9 | 10.0 | ug/L | 50.00 | | 90 | 40-140 | | | |
| Benzo(k)fluoranthene | 44.7 | 10.0 | ug/L | 50.00 | | 89 | 40-140 | | | |
| C11-C22 Aromatics1,2 | 82.3 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 815 | 100 | ug/L | 850.0 | | 96 | 40-140 | | | |
| Chrysene | 43.9 | 10.0 | ug/L | 50.00 | | 88 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 44.5 | 5.0 | ug/L | 50.00 | | 89 | 40-140 | | | |
| Fluoranthene | 41.5 | 10.0 | ug/L | 50.00 | | 83 | 40-140 | | | |
| Fluorene | 42.1 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 47.5 | 5.0 | ug/L | 50.00 | | 95 | 40-140 | | | |
| Naphthalene | 40.6 | 10.0 | ug/L | 50.00 | | 81 | 40-140 | | | |
| Phenanthrene | 42.1 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Pyrene | 41.4 | 5.0 | ug/L | 50.00 | | 83 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *50.0* | | ug/L | *50.00* | | *100* | *40-140* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CJ72304 - 3510C** | | | | | | | | | | |
| *Surrogate: 2-Fluorobiphenyl* | *49.7* | | ug/L | *50.00* | | *99* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *41.0* | | ug/L | *50.00* | | *82* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 364 | 100 | ug/L | 400.0 | | 91 | 40-140 | 6 | 25 | |
| C9-C18 Aliphatics1 | 209 | 100 | ug/L | 300.0 | | 70 | 40-140 | 9 | 25 | |
| Decane (C10) | 27 | 5 | ug/L | 50.00 | | 53 | 40-140 | 13 | 25 | |
| Docosane (C22) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | 7 | 25 | |
| Dodecane (C12) | 28 | 5 | ug/L | 50.00 | | 55 | 40-140 | 13 | 25 | |
| Eicosane (C20) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | 7 | 25 | |
| Hexacosane (C26) | 42 | 5 | ug/L | 50.00 | | 85 | 40-140 | 7 | 25 | |
| Hexadecane (C16) | 41 | 5 | ug/L | 50.00 | | 81 | 40-140 | 6 | 25 | |
| Hexatriacontane (C36) | 44 | 5 | ug/L | 50.00 | | 89 | 40-140 | 7 | 25 | |
| Nonadecane (C19) | 42 | 5 | ug/L | 50.00 | | 85 | 40-140 | 7 | 25 | |
| Nonane (C9) | 21 | 5 | ug/L | 50.00 | | 43 | 30-140 | 13 | 25 | |
| Octacosane (C28) | 42 | 5 | ug/L | 50.00 | | 85 | 40-140 | 7 | 25 | |
| Octadecane (C18) | 40 | 5 | ug/L | 50.00 | | 81 | 40-140 | 7 | 25 | |
| Tetracosane (C24) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | 7 | 25 | |
| Tetradecane (C14) | 37 | 5 | ug/L | 50.00 | | 75 | 40-140 | 9 | 25 | |
| Triacontane (C30) | 43 | 5 | ug/L | 50.00 | | 85 | 40-140 | 7 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *36.2* | | ug/L | *50.00* | | *72* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 40.7 | 5.0 | ug/L | 50.00 | | 81 | 40-140 | 8 | 20 | |
| Acenaphthene | 45.2 | 5.0 | ug/L | 50.00 | | 90 | 40-140 | 7 | 20 | |
| Acenaphthylene | 45.8 | 5.0 | ug/L | 50.00 | | 92 | 40-140 | 7 | 20 | |
| Anthracene | 48.6 | 5.0 | ug/L | 50.00 | | 97 | 40-140 | 12 | 20 | |
| Benzo(a)anthracene | 47.2 | 5.0 | ug/L | 50.00 | | 94 | 40-140 | 5 | 20 | |
| Benzo(a)pyrene | 48.2 | 10.0 | ug/L | 50.00 | | 96 | 40-140 | 9 | 20 | |
| Benzo(b)fluoranthene | 47.9 | 5.0 | ug/L | 50.00 | | 96 | 40-140 | 8 | 20 | |
| Benzo(g,h,i)perylene | 49.9 | 10.0 | ug/L | 50.00 | | 100 | 40-140 | 10 | 20 | |
| Benzo(k)fluoranthene | 49.6 | 10.0 | ug/L | 50.00 | | 99 | 40-140 | 10 | 20 | |
| C11-C22 Aromatics1,2 | 88.6 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 890 | 100 | ug/L | 850.0 | | 105 | 40-140 | 9 | 25 | |
| Chrysene | 48.3 | 10.0 | ug/L | 50.00 | | 97 | 40-140 | 10 | 20 | |
| Dibenzo(a,h)Anthracene | 50.4 | 5.0 | ug/L | 50.00 | | 101 | 40-140 | 12 | 20 | |
| Fluoranthene | 45.5 | 10.0 | ug/L | 50.00 | | 91 | 40-140 | 9 | 20 | |
| Fluorene | 44.9 | 5.0 | ug/L | 50.00 | | 90 | 40-140 | 6 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 54.4 | 5.0 | ug/L | 50.00 | | 109 | 40-140 | 14 | 20 | |
| Naphthalene | 43.6 | 10.0 | ug/L | 50.00 | | 87 | 40-140 | 7 | 20 | |
| Phenanthrene | 46.4 | 5.0 | ug/L | 50.00 | | 93 | 40-140 | 10 | 20 | |
| Pyrene | 44.6 | 5.0 | ug/L | 50.00 | | 89 | 40-140 | 7 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CJ72304 - 3510C** | | | | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *50.5* | | ug/L | *50.00* | | *101* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *50.7* | | ug/L | *50.00* | | *101* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *45.1* | | ug/L | *50.00* | | *90* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1710460

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 16.2 ºC. |
| Z16 | Aqueous pH measured in water at 15.2 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| S+ | Surrogate recovery(ies) above upper control limit (S+). |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| B+ | Blank Spike recovery is above upper control limit (B+). |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710460

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1740393 |
| Client: | ESS Laboratory<br>185 Frances Avenue<br>Cranston, RI 02910 |
| ATTN: | Shawn Morrell |
| Phone: | (401) 461-7181 |
| Project Name: | Not Specified |
| Project Number: | 1710460 |
| Report Date: | 11/10/17 |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

| Alpha Sample ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
|---|---|---|---|---|---|
| L1740393-01 | 1710460-02 | WATER | Not Specified | 10/18/17 12:00 | 11/03/17 |
| L1740393-02 | 1710460-06 | WATER | Not Specified | 10/18/17 12:10 | 11/03/17 |
| L1740393-03 | 1710654-02 | WATER | Not Specified | 10/18/17 11:15 | 11/03/17 |
| L1740393-04 | 1710654-06 | WATER | Not Specified | 10/18/17 11:00 | 11/03/17 |

**Project Name:** Not Specified **Lab Number:** L1740393

**Project Number:** 1710460 **Report Date:** 11/10/17

## MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

| **An affirmative response to questions A through F is required for "Presumptive Certainty" status** | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | YES |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | YES |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | YES |
| D | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?" | YES |
| E a. | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | N/A |
| E b. | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | N/A |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | YES |

| **A response to questions G, H and I is required for "Presumptive Certainty" status** | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | NO |
| H | Were all QC performance standards specified in the CAM protocol(s) achieved? | YES |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | NO |

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

**Please note that sample matrix information is located in the Sample Results section of this report.**

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

## Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** Not Specified
**Project Number:** 1710460
**Lab Number:** L1740393
**Report Date:** 11/10/17

**Case Narrative (continued)**

MCP Related Narratives

Total Metals

L1740393-02: The sample has elevated detection limits due to the dilution required by the high concentrations of target and non-target elements.

In reference to question G:

L1740393-02: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps

Title: Technical Director/Representative

Date: 11/10/17

# METALS

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-01 | Date Collected: | 10/18/17 12:00 |
| Client ID: | 1710460-02 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Lead, Total | 0.0181 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:51 | EPA 3005A | 97,6020A | AM |

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-02 | Date Collected: | 10/18/17 12:10 |
| Client ID: | 1710460-06 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Arsenic, Total | 0.0090 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:55 | EPA 3005A | 97,6020A | AM |
| Lead, Total | ND | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:55 | EPA 3005A | 97,6020A | AM |

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-03 | Date Collected: | 10/18/17 11:15 |
| Client ID: | 1710654-02 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Lead, Total | 0.0511 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:59 | EPA 3005A | 97,6020A | AM |

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-04 | Date Collected: | 10/18/17 11:00 |
| Client ID: | 1710654-06 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Lead, Total | 0.0117 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 10:03 | EPA 3005A | 97,6020A | AM |

**Project Name:** Not Specified
**Project Number:** 1710460
**Lab Number:** L1740393
**Report Date:** 11/10/17

# Method Blank Analysis
# Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1060416-1 | | | | | | | | | | |
| Arsenic, Total | ND | | mg/l | 0.0005 | -- | 1 | 11/07/17 13:10 | 11/08/17 09:40 | 97,6020A | AM |
| Lead, Total | ND | | mg/l | 0.0005 | -- | 1 | 11/07/17 13:10 | 11/08/17 09:40 | 97,6020A | AM |

**Prep Information**

Digestion Method: EPA 3005A

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060416-2 WG1060416-3 | | | | | | | | |
| Arsenic, Total | 106 | | 108 | | 80-120 | 2 | | 20 |
| Lead, Total | 109 | | 110 | | 80-120 | 1 | | 20 |

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

### Cooler Information

| Cooler | Custody Seal |
|---|---|
| A | Absent |

### Container Information

| Container ID | Container Type | Cooler | Initial pH | Final pH | Temp deg C | Pres | Seal | Frozen Date/Time | Analysis(*) |
|---|---|---|---|---|---|---|---|---|---|
| L1740393-01A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-PB-6020T-10(180) |
| L1740393-02A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-AS-6020T-10(180),MCP-PB-6020T-10(180) |
| L1740393-03A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-PB-6020T-10(180) |
| L1740393-04A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-PB-6020T-10(180) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

# GLOSSARY

### *Acronyms*

| | |
|---|---|
| EDL | - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME). |
| EPA | - Environmental Protection Agency. |
| LCS | - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes. |
| LCSD | - Laboratory Control Sample Duplicate: Refer to LCS. |
| LFB | - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes. |
| MDL | - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. |
| MS | - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. |
| MSD | - Matrix Spike Sample Duplicate: Refer to MS. |
| NA | - Not Applicable. |
| NC | - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit. |
| NDPA/DPA | - N-Nitrosodiphenylamine/Diphenylamine. |
| NI | - Not Ignitable. |
| NP | - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil. |
| RL | - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable. |
| RPD | - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report. |
| SRM | - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples. |
| STLP | - Semi-dynamic Tank Leaching Procedure per EPA Method 1315. |
| TIC | - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations. |

### *Footnotes*

| | |
|---|---|
| 1 | - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method. |

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### *Data Qualifiers*

| | |
|---|---|
| **A** | - Spectra identified as "Aldol Condensation Product". |
| **B** | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related |

**Project Name:** Not Specified **Lab Number:** L1740393

**Project Number:** 1710460 **Report Date:** 11/10/17

***Data Qualifiers***

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

**C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

**D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

**E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

**G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

**H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

**I** - The lower value for the two columns has been reported due to obvious interference.

**M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

**NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

**P** - The RPD between the results for the two columns exceeds the method-specified criteria.

**Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**S** - Analytical results are from modified screening analysis.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report

**Project Name:** Not Specified **Lab Number:** L1740393
**Project Number:** 1710460 **Report Date:** 11/10/17

## REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

# Certification Information

**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**
**EPA 624:** m/p-xylene, o-xylene
**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
**EPA 300:** DW: Bromide
**EPA 6860:** NPW and SCM: Perchlorate
**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation
**EPA 9012B:** NPW: Total Cyanide
**EPA 9050A:** NPW: Specific Conductance
**SM3500:** NPW: Ferrous Iron
**SM4500**: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
**SM5310C:** DW: Dissolved Organic Carbon

**Mansfield Facility**
**SM 2540D:** TSS
**EPA 3005A** NPW
**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
**Biological Tissue Matrix:** EPA 3050B

**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

***Drinking Water***
**EPA 300.0**: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
**EPA 332**: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
**Microbiology**: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

***Non-Potable Water***
**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
**EPA 624**: Volatile Halocarbons & Aromatics,
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
**Microbiology**: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

**Mansfield Facility:**

***Drinking Water***
**EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

***Non-Potable Water***
**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
**EPA 245.1** Hg.
**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L1740393

# ESS Laboratory — Alpha

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1710460

Turn Time __x__ Standard Other_____

Reporting Limits - _____NRWQC (SW)_____

Regulatory State: MA RI CT NH NJ NY ME Other_____

Electonic Deliverables Excel Access PDF

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1710460 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: 185 Frances Ave | Cranston, RI | Zip: 02910 | PO #: B2473 |
| Tel.: ext 3083 | email: smorrell@thielsch.com | email: | |

Analysis

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | | Lead | Arsenic | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40393.01 | 10/1817 | 1200 | Grab | Aq | 1710460-02 | | | | | | X | | | | | | | |
| .02 | 10/18/17 | 1210 | Grab | Aq | 1710460-06 | | | | | | X | X | | | | | | |
| .03 | 10/25/17 | 1115 | Grab | Aq | 1710654-02 | | | | | | X | | | | | | | |
| .04 | 10/25/17 | 1100 | Grab | Aq | 1710654-06 | | | | | | X | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: SALT WATER MRL - Pb < 8.1 ppb, AS < 36 ppb

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 15:16 11/3/17 | 11/3/17 15:16 | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1710460
Date Received: 10/18/2017
Project Due Date: 10/25/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? ~~Yes~~ / No — ML 10/18/17
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:
No Sample ID's listed on Bottles CA 10/18/17
See Attached ML 10/18/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 173866 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 173872 | Yes | NA | Yes | 250 mL Poly - HNO3 | HNO3 | |
| 03 | 173869 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 03 | 173870 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 04 | 173874 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 05 | 173863 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 173864 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 06 | 173871 | Yes | NA | Yes | 250 mL Poly - HNO3 | HNO3 | |
| 07 | 173873 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 08 | 173867 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 08 | 173868 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 08 | 174007 | Yes | NA | Yes | 1L Amber - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: [signature] Date & Time: 10/18/17 2036
Reviewed By: [signature] Date & Time: 10/18/17 2130
Delivered By: [signature] 10/18/17 2130

- EPH bottles rec'd unpreserved
- No sample IDs – samples labeled by collection times/tests
- COC = INF-1 = 2 bottles for EA PAH; rec'd 1
- Rec'd bottle collected 10/18/17 at 12:15 for EA PAH; time corresponds with EFF-4 (also collected at 12:15) for EPH. EFF sample for EA PAH is ID'd EFF-1, collected 12:10.

RL 10/18/17 2130

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1710460

Turn Time 5-Day Rush

Regulatory State

Reporting Limits

Is this project for any of the following?: ○CT RCP ○MA MCP ○[illegible]P

Electonic Deliverables: ☐Limit Checker ☑Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter Contracting | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Tyler Lewis | 95 Behen St. |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Everett | MA | 02149 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 508-818-0480 | | ~~[illegible]~~ tlewis@charter.vs |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | EA PAH/SEMI VOA | Metals | TSS | Turbidity | PH | EPH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10/18/17 | 12:00 | water grab | AQ | Wynn-CC-171018-INF-1 | 2 | | | | | |
| 2 | 10/18/17 | 12:00 | " | | Wynn-CC-171018-INF-2 | | 1 | | | | |
| 3 | 10/18/17 | 12:10 | " | | Wynn-CC-171018-INF-3 | | | | | | 2 |
| 4 | 10/18/17 | 12:10 | " | | Wynn-CC-171018-INF-4 | | | 1 | 1 | 1 | |
| 5 | 10/18/17 | 12:10 | " | | Wynn-CC-171018-EFF-1 | 2 | | | | | |
| 6 | 10/18/17 | 12:10 | " | | Wynn-CC-171018-EFF-2 | | 1 | | | | |
| 7 | 10/18/17 | 12:15 | " | | Wynn-CC-171018-EFF-3 | | | 1 | 1 | 1 | |
| 8 | 10/18/17 | 12:15 | " | AQ | Wynn-CC-171018-EFF-4 | | | | | | 2 |
| | ~~[illegible]~~ | | | | | | | | | | |
| | | | | | | | | | | | |

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

| | EA PAH/SEMI VOA | Metals | TSS | Turbidity | PH | EPH |
|---|---|---|---|---|---|---|
| Container Type | AG | P | | | | |
| Container Volume | 1L | 3 | | | | |
| Preservation Code | | 4 | | | | |
| Number of Containers per Sample: | 2 | 4 | 1 | 1 | | |

**Laboratory Use Only**

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: °C ice temp 2.3

Sampled by: Tyler Lewis

Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 10/18/17 14:30 | JAP ~~Charter Fridge 10/18/17 15:39~~ | | [signature] 10/18/17 15:39 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| [signature] 10/18/17 19:43 | [signature] 10/18/17 2024 | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1710654**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 3:53 pm, Nov 14, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
Alpha Analytical - Westboro, MA Lead

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

## SAMPLE RECEIPT

The following samples were received on October 25, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, EPH, and SVOA were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1710654-01 | Wynn-CC-171025-INF1 | Aqueous | 8082A, 8270D |
| 1710654-02 | Wynn-CC-171025-INF2 | Aqueous | §, 6010C, 7470A |
| 1710654-03 | Wynn-CC-171025-INF3 | Aqueous | EPH8270, MADEP-EPH |
| 1710654-04 | Wynn-CC-171025-INF4 | Aqueous | 2540D, 9040 |
| 1710654-05 | Wynn-CC-171025-EFF1 | Aqueous | 8082A, 8270D |
| 1710654-06 | Wynn-CC-171025-EFF2 | Aqueous | §, 6010C, 7470A |
| 1710654-07 | Wynn-CC-171025-EFF3 | Aqueous | EPH8270, MADEP-EPH |
| 1710654-08 | Wynn-CC-171025-EFF4 | Aqueous | 2540D, 9040 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1710654

## PROJECT NARRATIVE

**No unusual observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1710654-01 through 1710654-08**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| ( ) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | ( ) 6020 Metals CAM III D | (X) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes (X) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes ( ) No (X)* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes (X) No ( )* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (X)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard Date: November 14, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF1
Date Sampled: 10/25/17 11:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| **Aroclor 1248** | **0.19** (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| **Aroclor 1254 [2C]** | **0.17** (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| **Aroclor 1260 [2C]** | **0.07** (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:10 | | CJ73001 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *64 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *67 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *92 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF1
Date Sampled: 10/25/17 11:15
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/27/17 18:02

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.9) | | 8270D | | 1 | 10/30/17 22:58 | C7J0433 | CJ72710 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *63 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *99 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *79 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *68 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *83 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *75 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *64 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF2
Date Sampled: 10/25/17 11:15
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| **Arsenic** | **38.8** (25.0) | | 6010C | | 1 | BJV | 10/31/17 12:31 | 50 | 25 | CJ72547 |
| **Lead** | **0.051** (0.005) | | § | | 1 | SUB | 11/08/17 9:59 | 1 | 1 | CK71430 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 10/27/17 12:03 | 20 | 40 | CJ72550 |
| **Vanadium** | **29.3** (10.0) | | 6010C | | 1 | KJK | 10/28/17 0:46 | 50 | 25 | CJ72547 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF3
Date Sampled: 10/25/17 11:15
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/27/17 11:28

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 10/27/17 19:06 | C7J0404 | CJ72703 |
| **C19-C36 Aliphatics1** | **103** (93) | | MADEP-EPH | | 1 | ZLC | 10/27/17 19:06 | C7J0404 | CJ72703 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | VSC | 10/27/17 16:39 | C7J0421 | CJ72703 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | VSC | 10/27/17 16:39 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CJ72703 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *53 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *94 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *94 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *77 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-INF4
Date Sampled: 10/25/17 11:15
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-04
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.26** (N/A) | | 9040 | | 1 | BCA | 10/25/17 21:09 | S.U. | CJ72544 |
| **pH Sample Temp** | **Aqueous pH measured in water at 17.0 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **92** (10) | | 2540D | | 1 | EEM | 10/27/17 17:45 | mg/L | CJ72714 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF1
Date Sampled: 10/25/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 10/30/17 15:10

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 10/31/17 20:28 | | CJ73001 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *101 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *104 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF1
Date Sampled: 10/25/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 10/27/17 18:02

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.6) | | 8270D | | 1 | 10/30/17 23:33 | C7J0433 | CJ72710 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *62 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *99 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *87 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *83 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *85 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *87 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *96 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF2
Date Sampled: 10/25/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 3005A/200.7

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (25.0) | | 6010C | | 1 | KJK | 10/28/17 1:23 | 50 | 25 | CJ72547 |
| **Lead** | **0.012** (0.005) | | § | | 1 | SUB | 11/08/17 10:03 | 1 | 1 | CK71430 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 10/27/17 12:05 | 20 | 40 | CJ72550 |
| Vanadium | ND (10.0) | | 6010C | | 1 | KJK | 10/28/17 1:23 | 50 | 25 | CJ72547 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF3
Date Sampled: 10/25/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 10/27/17 11:28

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 10/27/17 19:54 | C7J0404 | CJ72703 |
| C19-C36 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 10/27/17 19:54 | C7J0404 | CJ72703 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | VSC | 10/27/17 17:16 | C7J0421 | CJ72703 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | VSC | 10/27/17 17:16 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CJ72703 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *70 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *90 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *82 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: Wynn-CC-171025-EFF4
Date Sampled: 10/25/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1710654
ESS Laboratory Sample ID: 1710654-08
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.90** (N/A) | | 9040 | | 1 | BCA | 10/25/17 21:09 | S.U. | CJ72544 |
| **pH Sample Temp** | **Aqueous pH measured in water at 16.2 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **27** (5) | | 2540D | | 1 | EEM | 10/27/17 17:45 | mg/L | CJ72714 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CJ72547 - 3005A/200.7** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 25.0 | ug/L | | | | | | | |
| Vanadium | ND | 10.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 223 | 25.0 | ug/L | 250.0 | | 89 | 80-120 | | | |
| Vanadium | 257 | 10.0 | ug/L | 250.0 | | 103 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | ND | 25.0 | ug/L | 250.0 | | 0 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Arsenic | 237 | 25.0 | ug/L | 250.0 | | 95 | 80-120 | 6 | 20 | |
| Vanadium | 265 | 10.0 | ug/L | 250.0 | | 106 | 80-120 | 3 | 20 | |
| **LCS Dup** | | | | | | | | | | |
| Arsenic | ND | 25.0 | ug/L | 250.0 | | 0 | 80-120 | | 20 | |
| **Batch CJ72550 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 6.00 | 0.20 | ug/L | 6.000 | | 100 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 6.08 | 0.20 | ug/L | 6.000 | | 101 | 80-120 | 1 | 20 | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CJ73001 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.05 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CJ73001 - 3510C** | | | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *ND* | | ug/L | *0.05000* | | *84* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *ND* | | ug/L | *0.05000* | | *67* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *ND* | | ug/L | *0.05000* | | *62* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *ND* | | ug/L | *0.05000* | | *62* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.89 | 0.05 | ug/L | 1.000 | | 89 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.72 | 0.05 | ug/L | 1.000 | | 72 | 40-140 | | | |
| Aroclor 1260 | 0.95 | 0.05 | ug/L | 1.000 | | 95 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.74 | 0.05 | ug/L | 1.000 | | 74 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0515* | | ug/L | *0.05000* | | *103* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0401* | | ug/L | *0.05000* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0354* | | ug/L | *0.05000* | | *71* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0320* | | ug/L | *0.05000* | | *64* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.91 | 0.05 | ug/L | 1.000 | | 91 | 40-140 | 2 | 20 | |
| Aroclor 1016 [2C] | 0.76 | 0.05 | ug/L | 1.000 | | 76 | 40-140 | 5 | 20 | |
| Aroclor 1260 | 1.01 | 0.05 | ug/L | 1.000 | | 101 | 40-140 | 6 | 20 | |
| Aroclor 1260 [2C] | 0.80 | 0.05 | ug/L | 1.000 | | 80 | 40-140 | 7 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0519* | | ug/L | *0.05000* | | *104* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0383* | | ug/L | *0.05000* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0379* | | ug/L | *0.05000* | | *76* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0327* | | ug/L | *0.05000* | | *65* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CJ72710 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *68.2* | | ug/L | *100.0* | | *68* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *119* | | ug/L | *150.0* | | *80* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *98.5* | | ug/L | *150.0* | | *66* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *75.4* | | ug/L | *100.0* | | *75* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *92.7* | | ug/L | *150.0* | | *62* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *74.3* | | ug/L | *100.0* | | *74* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *100* | | ug/L | *150.0* | | *67* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *78.8* | | ug/L | *100.0* | | *79* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 102 | 6.0 | ug/L | 100.0 | | 102 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *80.4* | | ug/L | *100.0* | | *80* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *163* | | ug/L | *150.0* | | *109* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *116* | | ug/L | *150.0* | | *78* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *86.5* | | ug/L | *100.0* | | *86* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *102* | | ug/L | *150.0* | | *68* | *15-110* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CJ72710 - 3520C** | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | *110* | | ug/L | *100.0* | | *110* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *122* | | ug/L | *150.0* | | *81* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *106* | | ug/L | *100.0* | | *106* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 112 | 6.0 | ug/L | 100.0 | | 112 | 40-140 | 10 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *75.5* | | ug/L | *100.0* | | *76* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *156* | | ug/L | *150.0* | | *104* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *112* | | ug/L | *150.0* | | *75* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *87.2* | | ug/L | *100.0* | | *87* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *104* | | ug/L | *150.0* | | *69* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *84.5* | | ug/L | *100.0* | | *85* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *115* | | ug/L | *150.0* | | *77* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *80.0* | | ug/L | *100.0* | | *80* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CJ72714 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 34 | | mg/L | 34.10 | | 100 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CJ72703 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *34.7* | | ug/L | *50.00* | | *69* | *40-140* | | | |
| **Blank** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CJ72703 - 3510C** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *46.2* | | ug/L | *50.00* | | *92* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *44.3* | | ug/L | *50.00* | | *89* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *39.3* | | ug/L | *50.00* | | *79* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 323 | 100 | ug/L | 400.0 | | 81 | 40-140 | | | |
| C9-C18 Aliphatics1 | 192 | 100 | ug/L | 300.0 | | 64 | 40-140 | | | |
| Decane (C10) | 27 | 5 | ug/L | 50.00 | | 54 | 40-140 | | | |
| Docosane (C22) | 37 | 5 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Dodecane (C12) | 26 | 5 | ug/L | 50.00 | | 53 | 40-140 | | | |
| Eicosane (C20) | 37 | 5 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Hexacosane (C26) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Hexadecane (C16) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | | | |
| Hexatriacontane (C36) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Nonadecane (C19) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Nonane (C9) | 21 | 5 | ug/L | 50.00 | | 42 | 30-140 | | | |
| Octacosane (C28) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Octadecane (C18) | 36 | 5 | ug/L | 50.00 | | 71 | 40-140 | | | |
| Tetracosane (C24) | 38 | 5 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Tetradecane (C14) | 33 | 5 | ug/L | 50.00 | | 66 | 40-140 | | | |
| Triacontane (C30) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *34.2* | | ug/L | *50.00* | | *68* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 36.4 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | | | |
| Acenaphthene | 40.3 | 5.0 | ug/L | 50.00 | | 81 | 40-140 | | | |
| Acenaphthylene | 40.2 | 5.0 | ug/L | 50.00 | | 80 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CJ72703 - 3510C** | | | | | | | | | | |
| Anthracene | 43.4 | 5.0 | ug/L | 50.00 | | 87 | 40-140 | | | |
| Benzo(a)anthracene | 41.9 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Benzo(a)pyrene | 43.3 | 10.0 | ug/L | 50.00 | | 87 | 40-140 | | | |
| Benzo(b)fluoranthene | 43.7 | 5.0 | ug/L | 50.00 | | 87 | 40-140 | | | |
| Benzo(g,h,i)perylene | 34.2 | 10.0 | ug/L | 50.00 | | 68 | 40-140 | | | |
| Benzo(k)fluoranthene | 44.6 | 10.0 | ug/L | 50.00 | | 89 | 40-140 | | | |
| C11-C22 Aromatics1,2 | 93.0 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 784 | 100 | ug/L | 850.0 | | 92 | 40-140 | | | |
| Chrysene | 42.3 | 10.0 | ug/L | 50.00 | | 85 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 37.4 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Fluoranthene | 41.6 | 10.0 | ug/L | 50.00 | | 83 | 40-140 | | | |
| Fluorene | 40.0 | 5.0 | ug/L | 50.00 | | 80 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 39.0 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Naphthalene | 38.9 | 10.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Phenanthrene | 41.0 | 5.0 | ug/L | 50.00 | | 82 | 40-140 | | | |
| Pyrene | 42.2 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *48.3* | | ug/L | *50.00* | | *97* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *49.3* | | ug/L | *50.00* | | *99* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *39.8* | | ug/L | *50.00* | | *80* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 339 | 100 | ug/L | 400.0 | | 85 | 40-140 | 5 | 25 | |
| C9-C18 Aliphatics1 | 202 | 100 | ug/L | 300.0 | | 67 | 40-140 | 5 | 25 | |
| Decane (C10) | 27 | 5 | ug/L | 50.00 | | 55 | 40-140 | 2 | 25 | |
| Docosane (C22) | 39 | 5 | ug/L | 50.00 | | 78 | 40-140 | 5 | 25 | |
| Dodecane (C12) | 28 | 5 | ug/L | 50.00 | | 55 | 40-140 | 5 | 25 | |
| Eicosane (C20) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | 5 | 25 | |
| Hexacosane (C26) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 5 | 25 | |
| Hexadecane (C16) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | 8 | 25 | |
| Hexatriacontane (C36) | 42 | 5 | ug/L | 50.00 | | 83 | 40-140 | 5 | 25 | |
| Nonadecane (C19) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 5 | 25 | |
| Nonane (C9) | 21 | 5 | ug/L | 50.00 | | 42 | 30-140 | 0.1 | 25 | |
| Octacosane (C28) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 5 | 25 | |
| Octadecane (C18) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | 6 | 25 | |
| Tetracosane (C24) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | 5 | 25 | |
| Tetradecane (C14) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | 6 | 25 | |
| Triacontane (C30) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | 5 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *30.5* | | ug/L | *50.00* | | *61* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 36.9 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | 1 | 20 | |
| Acenaphthene | 41.0 | 5.0 | ug/L | 50.00 | | 82 | 40-140 | 2 | 20 | |
| Acenaphthylene | 40.3 | 5.0 | ug/L | 50.00 | | 81 | 40-140 | 0.3 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CJ72703 - 3510C** | | | | | | | | | | |
| Anthracene | 43.9 | 5.0 | ug/L | 50.00 | | 88 | 40-140 | 1 | 20 | |
| Benzo(a)anthracene | 44.3 | 5.0 | ug/L | 50.00 | | 89 | 40-140 | 5 | 20 | |
| Benzo(a)pyrene | 44.7 | 10.0 | ug/L | 50.00 | | 89 | 40-140 | 3 | 20 | |
| Benzo(b)fluoranthene | 45.7 | 5.0 | ug/L | 50.00 | | 91 | 40-140 | 5 | 20 | |
| Benzo(g,h,i)perylene | 35.1 | 10.0 | ug/L | 50.00 | | 70 | 40-140 | 3 | 20 | |
| Benzo(k)fluoranthene | 45.0 | 10.0 | ug/L | 50.00 | | 90 | 40-140 | 0.7 | 20 | |
| C11-C22 Aromatics1,2 | 97.0 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 802 | 100 | ug/L | 850.0 | | 94 | 40-140 | 2 | 25 | |
| Chrysene | 44.0 | 10.0 | ug/L | 50.00 | | 88 | 40-140 | 4 | 20 | |
| Dibenzo(a,h)Anthracene | 38.8 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | 4 | 20 | |
| Fluoranthene | 41.5 | 10.0 | ug/L | 50.00 | | 83 | 40-140 | 0.5 | 20 | |
| Fluorene | 41.0 | 5.0 | ug/L | 50.00 | | 82 | 40-140 | 2 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 40.5 | 5.0 | ug/L | 50.00 | | 81 | 40-140 | 4 | 20 | |
| Naphthalene | 37.4 | 10.0 | ug/L | 50.00 | | 75 | 40-140 | 4 | 20 | |
| Phenanthrene | 42.0 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | 3 | 20 | |
| Pyrene | 42.9 | 5.0 | ug/L | 50.00 | | 86 | 40-140 | 2 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *44.8* | | ug/L | *50.00* | | *90* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *46.1* | | ug/L | *50.00* | | *92* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *39.2* | | ug/L | *50.00* | | *78* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1710654

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 17.0 ºC. |
| Z16 | Aqueous pH measured in water at 16.2 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1710654

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ANALYTICAL REPORT

| | |
|---|---|
| Lab Number: | L1740393 |
| Client: | ESS Laboratory<br>185 Frances Avenue<br>Cranston, RI 02910 |
| ATTN: | Shawn Morrell |
| Phone: | (401) 461-7181 |
| Project Name: | Not Specified |
| Project Number: | 1710460 |
| Report Date: | 11/10/17 |

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

| Alpha Sample ID | Client ID | Matrix | Sample Location | Collection Date/Time | Receive Date |
|---|---|---|---|---|---|
| L1740393-01 | 1710460-02 | WATER | Not Specified | 10/18/17 12:00 | 11/03/17 |
| L1740393-02 | 1710460-06 | WATER | Not Specified | 10/18/17 12:10 | 11/03/17 |
| L1740393-03 | 1710654-02 | WATER | Not Specified | 10/18/17 11:15 | 11/03/17 |
| L1740393-04 | 1710654-06 | WATER | Not Specified | 10/18/17 11:00 | 11/03/17 |

**Project Name:** Not Specified **Lab Number:** L1740393

**Project Number:** 1710460 **Report Date:** 11/10/17

## MADEP MCP Response Action Analytical Report Certification

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

| **An affirmative response to questions A through F is required for "Presumptive Certainty" status** | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | YES |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | YES |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | YES |
| D | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?" | YES |
| E a. | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | N/A |
| E b. | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | N/A |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | YES |

| **A response to questions G, H and I is required for "Presumptive Certainty" status** | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | NO |
| H | Were all QC performance standards specified in the CAM protocol(s) achieved? | YES |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | NO |

**For any questions answered "No", please refer to the case narrative section on the following page(s).**

**Please note that sample matrix information is located in the Sample Results section of this report.**

**Project Name:** Not Specified
**Project Number:** 1710460
**Lab Number:** L1740393
**Report Date:** 11/10/17

## Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

**Project Name:** Not Specified **Lab Number:** L1740393
**Project Number:** 1710460 **Report Date:** 11/10/17

**Case Narrative (continued)**

MCP Related Narratives

Total Metals

L1740393-02: The sample has elevated detection limits due to the dilution required by the high concentrations of target and non-target elements.

In reference to question G:

L1740393-02: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question I:

All samples were analyzed for a subset of MCP analytes per the Chain of Custody.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Cripps

Title: Technical Director/Representative Date: 11/10/17

# METALS

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-01 | Date Collected: | 10/18/17 12:00 |
| Client ID: | 1710460-02 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Lead, Total | 0.0181 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:51 | EPA 3005A | 97,6020A | AM |

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-02 | Date Collected: | 10/18/17 12:10 |
| Client ID: | 1710460-06 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Arsenic, Total | 0.0090 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:55 | EPA 3005A | 97,6020A | AM |
| Lead, Total | ND | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:55 | EPA 3005A | 97,6020A | AM |

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-03 | Date Collected: | 10/18/17 11:15 |
| Client ID: | 1710654-02 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Lead, Total | 0.0511 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 09:59 | EPA 3005A | 97,6020A | AM |

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

**SAMPLE RESULTS**

| | | | |
|---|---|---|---|
| Lab ID: | L1740393-04 | Date Collected: | 10/18/17 11:00 |
| Client ID: | 1710654-06 | Date Received: | 11/03/17 |
| Sample Location: | Not Specified | Field Prep: | Not Specified |
| Matrix: | Water | | |

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Prep Method | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab | | | | | | | | | | | |
| Lead, Total | 0.0117 | | mg/l | 0.0050 | -- | 10 | 11/07/17 13:10 | 11/08/17 10:03 | EPA 3005A | 97,6020A | AM |

**Project Name:** Not Specified
**Project Number:** 1710460
**Lab Number:** L1740393
**Report Date:** 11/10/17

# Method Blank Analysis
# Batch Quality Control

| Parameter | Result | Qualifier | Units | RL | MDL | Dilution Factor | Date Prepared | Date Analyzed | Analytical Method | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1060416-1 | | | | | | | | | | |
| Arsenic, Total | ND | | mg/l | 0.0005 | -- | 1 | 11/07/17 13:10 | 11/08/17 09:40 | 97,6020A | AM |
| Lead, Total | ND | | mg/l | 0.0005 | -- | 1 | 11/07/17 13:10 | 11/08/17 09:40 | 97,6020A | AM |

**Prep Information**

Digestion Method: EPA 3005A

# Lab Control Sample Analysis
## Batch Quality Control

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

| Parameter | LCS %Recovery | Qual | LCSD %Recovery | Qual | %Recovery Limits | RPD | Qual | RPD Limits |
|---|---|---|---|---|---|---|---|---|
| MCP Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1060416-2 WG1060416-3 | | | | | | | | |
| Arsenic, Total | 106 | | 108 | | 80-120 | 2 | | 20 |
| Lead, Total | 109 | | 110 | | 80-120 | 1 | | 20 |

**Project Name:** Not Specified
**Project Number:** 1710460

**Lab Number:** L1740393
**Report Date:** 11/10/17

## Sample Receipt and Container Information

Were project specific reporting limits specified? YES

### Cooler Information

| Cooler | Custody Seal |
|---|---|
| A | Absent |

### Container Information

| Container ID | Container Type | Cooler | Initial pH | Final pH | Temp deg C | Pres | Seal | Frozen Date/Time | Analysis(*) |
|---|---|---|---|---|---|---|---|---|---|
| L1740393-01A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-PB-6020T-10(180) |
| L1740393-02A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-AS-6020T-10(180),MCP-PB-6020T-10(180) |
| L1740393-03A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-PB-6020T-10(180) |
| L1740393-04A | Plastic 250ml HNO3 preserved | A | <2 | <2 | 11.4 | Y | Absent | | MCP-PB-6020T-10(180) |

*Values in parentheses indicate holding time in days

| | | | |
|---|---|---|---|
| **Project Name:** | Not Specified | **Lab Number:** | L1740393 |
| **Project Number:** | 1710460 | **Report Date:** | 11/10/17 |

# GLOSSARY

### *Acronyms*

| | |
|---|---|
| EDL | - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME). |
| EPA | - Environmental Protection Agency. |
| LCS | - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes. |
| LCSD | - Laboratory Control Sample Duplicate: Refer to LCS. |
| LFB | - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes. |
| MDL | - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. |
| MS | - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. |
| MSD | - Matrix Spike Sample Duplicate: Refer to MS. |
| NA | - Not Applicable. |
| NC | - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit. |
| NDPA/DPA | - N-Nitrosodiphenylamine/Diphenylamine. |
| NI | - Not Ignitable. |
| NP | - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil. |
| RL | - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable. |
| RPD | - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report. |
| SRM | - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples. |
| STLP | - Semi-dynamic Tank Leaching Procedure per EPA Method 1315. |
| TIC | - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations. |

### *Footnotes*

| | |
|---|---|
| 1 | - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method. |

### *Terms*

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

### *Data Qualifiers*

| | |
|---|---|
| **A** | - Spectra identified as "Aldol Condensation Product". |
| **B** | - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related |

**Project Name:** Not Specified **Lab Number:** L1740393

**Project Number:** 1710460 **Report Date:** 11/10/17

***Data Qualifiers***

projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

**C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

**D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

**E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

**G** - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

**H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

**I** - The lower value for the two columns has been reported due to obvious interference.

**M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

**NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

**P** - The RPD between the results for the two columns exceeds the method-specified criteria.

**Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

**R** - Analytical results are from sample re-analysis.

**RE** - Analytical results are from sample re-extraction.

**S** - Analytical results are from modified screening analysis.

**J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

**ND** - Not detected at the reporting limit (RL) for the sample.

*Report Format:* Data Usability Report

**Project Name:** Not Specified
**Project Number:** 1710460
**Lab Number:** L1740393
**Report Date:** 11/10/17

## REFERENCES

97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

# Certification Information

**The following analytes are not included in our Primary NELAP Scope of Accreditation:**

**Westborough Facility**
**EPA 624:** m/p-xylene, o-xylene
**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
**EPA 8270D:** NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
**EPA 300:** DW: Bromide
**EPA 6860:** NPW and SCM: Perchlorate
**EPA 9010:** NPW and SCM: Amenable Cyanide Distillation
**EPA 9012B:** NPW: Total Cyanide
**EPA 9050A:** NPW: Specific Conductance
**SM3500:** NPW: Ferrous Iron
**SM4500**: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
**SM5310C:** DW: Dissolved Organic Carbon

**Mansfield Facility**
**SM 2540D:** TSS
**EPA 3005A** NPW
**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
**Biological Tissue Matrix:** EPA 3050B

**The following analytes are included in our Massachusetts DEP Scope of Accreditation**

**Westborough Facility:**

***Drinking Water***
**EPA 300.0**: Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
**EPA 332**: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
**Microbiology**: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

***Non-Potable Water***
**SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH**, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.**
**EPA 624**: Volatile Halocarbons & Aromatics,
**EPA 608**: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
**EPA 625**: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
**Microbiology**: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

**Mansfield Facility:**

***Drinking Water***
**EPA 200.7:** Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

***Non-Potable Water***
**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
**EPA 245.1** Hg.
**SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

L1740393

# ESS Laboratory **Alpha**

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1710460

Turn Time __x__ Standard Other_____

Reporting Limits - _____NRWQC (SW)_____

Regulatory State: MA RI CT NH NJ NY ME Other_____

Electonic Deliverables Excel Access PDF

Is this project for any of the following:(please circle)
MA-MCP Navy USACE CT DEP Other_____

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1710460 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: 185 Frances Ave | Cranston, RI | Zip: 02910 | PO #: B2473 |
| Tel.: ext 3083 | email: smorrell@thielsch.com | email: | |

Analysis

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | | Lead | Arsenic | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40393.01 | 10/1817 | 1200 | Grab | Aq | 1710460-02 | | | | | | X | | | | | | | |
| .02 | 10/18/17 | 1210 | Grab | Aq | 1710460-06 | | | | | | X | X | | | | | | |
| .03 | 10/25/17 | 1115 | Grab | Aq | 1710654-02 | | | | | | X | | | | | | | |
| .04 | 10/25/17 | 1100 | Grab | Aq | 1710654-06 | | | | | | X | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: SALT WATER MRL - Pb <8.1ppb, AS <36 ppb

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 15:16 11/3/17 | 11/3/17 AAL 15:16 | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1710654
Date Received: 10/25/2017
Project Due Date: 11/1/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.0 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 176101 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 176102 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 176107 | Yes | NA | Yes | 250 mL Poly - HNO3 | HNO3 | |
| 03 | 176099 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 03 | 176100 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 04 | 176105 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 05 | 176097 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 176098 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 06 | 176106 | Yes | NA | Yes | 250 mL Poly - HNO3 | HNO3 | |
| 07 | 176095 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 07 | 176096 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 08 | 176104 | Yes | NA | Yes | 1L Poly - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 10/25/17 1903
Reviewed By: Date & Time: 10/25/17 1953
Delivered By: 10/25/17 1953

ESS Laboratory
*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

Turn Time: 5-Day (circled) Rush
Regulatory State:
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

ESS Lab #: 1710654
Reporting Limits: NRWQC (SW)
Electonic Deliverables: ☐ Limit Checker ☐ Other (Please Specify) ☑ Standard Excel

Company Name: SPS New England Inc
Contact Person: Katherine Mason
City: Salisbury
State: MA
Telephone Number: 6176087317
FAX Number:
Project #: 454
Project Name: Wynn Dredging
Address: 98 Elm Street
Zip Code: 01952
PO #:
Email Address: KMason@Charter.us

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | METALS (arsenic, lead, mercury, vanadium) | TSS | PH | EPH | PCBs | SVOCs (biethylene, phthalate) | | | Sub Pb | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10/25/17 | 11:15 | GRAB | AQ | Wynn-CC-171025-INF-1 | | | | | 2 | 2 | | | | | | | | | | |
| 2 | " | " | " | " | INF-2 | 1 | | | | | | | | x | | | | | | | |
| 3 | " | " | " | " | INF-3 | | | | 2 | | | | | | | | | | | | |
| 4 | " | " | " | " | INF-4 | | 1 | 1 | | | | | | | | | | | | | |
| 5 | " | 11:00 | " | " | EFF-1 | | | | | 2 | 2 | | | | | | | | | | |
| 6 | " | " | " | " | EFF-2 | 1 | | | | | | | | x | | | | | | | |
| 7 | " | " | " | " | EFF-3 | | | | 2 | | | | | | | | | | | | |
| 8 | " | " | " | " | EFF-4 | | 1 | 1 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | Changes made -11/3/17 - ML | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type: | AC-Air Cassette | AG-Amber Glass | B-BOD Bottle | C-Cubitainer | G - Glass | O-Other | P-Poly | S-Sterile | V-Vial | P | P | P | P | AG | AG | | | | | | |
| Container Volume: | 1-100 mL | 2-2.5 gal | 3-250 mL | 4-300 mL | 5-500 mL | 6-1L | 7-VOA | 8-2 oz | 9-4 oz | 10-8 oz | 11-Other* | 3 | 6 | 6 | 6 | 6 | 6 | | | | |
| Preservation Code: | 1-Non Preserved | 2-HCl | 3-H2SO4 | 4-HNO3 | 5-NaOH | 6-Methanol | 7-Na2S2O3 | 8-ZnAce, NaOH | 9-NH4Cl | 10-DI H2O | 11-Other* | 4 | 1 | 1 | 1 | 1 | 1 | | | | |
| Number of Containers per Sample: | | | | | | | | | | | | | | | | | | | | | |

**Laboratory Use Only**

Cooler Present: _____
Seals Intact: _____
Cooler Temperature: °C

Sampled by: Meaghan Clifford

Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| | | | |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1710654

Turn Time (5-Day) Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP
Reporting Limits
Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: Charter Contracting
Contact Person:
Project #: 454
Project Name: Wynn Dredge
Address: 95 Behan St.
City: Everett
State: ~~Everett~~ MA
Zip Code: 02149
PO #:
Telephone Number: 508-815-0480
FAX Number:
Email Address: tlewis@charter.us

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | EPA PAH | Metals | TSS | Turbidity | PH | EPH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10/25/17 | 11:15 | Grab | water | Wynn-CC-171025-INF1 | 2 | | | | | |
| 2 | 10/25/17 | 11:15 | grab | water | Wynn-CC-171025-INF2 | | 1 | | | | |
| 3 | 10/25/17 | 11:15 | grab | water | Wynn-CC-171025-INF3 | | | | | | 2 |
| 4 | 10/25/17 | 11:15 | grab | water | Wynn-CC-171025-INF4 | | | 1 | 1 | 1 | |
| 5 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025 ~~[illegible]~~ -EFF1 | 2 | | | | | |
| 6 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025-EFF2 | | 1 | | | | |
| 7 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025-EFF3 | | | | | | 2 |
| 8 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025-EFF4 | | | 1 | 1 | 1 | |

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

| | EPA PAH | Metals | TSS | Turbidity | PH | EPH |
|---|---|---|---|---|---|---|
| Container Type: | AG | P | P | P | P | AG |
| Preservation Code: | 1 | 4 | 1 | 1 | 1 | 2 |
| Number of Containers per Sample: | 2 | 3 | 3 | 2 | 2 | |

Laboratory Use Only
Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 2.0

Sampled by: [signature]
Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 13:16 10/25/17 | [signature] 13:16 10/25/17 | [signature] 17:31 10/25/17 | [signature] 10/25/17 1850 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

ESS Laboratory
*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

Turn Time: 5-Day (circled) Rush
Regulatory State:
Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

ESS Lab #: 1710654
Reporting Limits: NRWQC (SW)
Electonic Deliverables: ☐ Limit Checker ☐ Other (Please Specify) ☑ Standard Excel

Company Name: SPS New England Inc
Contact Person: Katherine Mason
City: Salisbury
State: MA
Telephone Number: 6176087317
FAX Number:
Project #: 454
Project Name: Wynn Dredging
Address: 98 Elm Street
Zip Code: 01952
PO #:
Email Address: Kmason@Charter.us

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | METALS (arsenic, lead, mercury, vanadium) | TSS | PH | EPH | PCBs | SVOCs (biethylene, phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10/25/17 | 11:15 | GRAB | AQ | Wynn-CC-171025-INF-1 | | | | | 2 | 2 |
| 2 | " | " | " | " | INF-2 | 1 | | | | | |
| 3 | " | " | " | " | INF-3 | | | | 2 | | |
| 4 | " | " | " | " | INF-4 | | 1 | 1 | | | |
| 5 | " | 11:00 | " | " | EFF-1 | | | | | 2 | 2 |
| 6 | " | " | " | " | EFF-2 | 1 | | | | | |
| 7 | " | " | " | " | EFF-3 | | | | 2 | | |
| 8 | " | " | " | " | EFF-4 | | 1 | 1 | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial | P | P | P | P | AG | AG |
| Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* | 3 | 6 | 6 | 6 | 6 | 6 |
| Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* | 4 | 1 | 1 | 1 | 1 | 1 |
| Number of Containers per Sample: | | | | | | |

**Laboratory Use Only**

Cooler Present: _____
Seals Intact: _____
Cooler Temperature: °C

Sampled by: Meaghan Clifford

Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| | | | |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

Turn Time: 5-Day Rush
Regulatory State
Is this project for any of the following?: CT RCP MA MCP RGP

ESS Lab # 1710654
Reporting Limits
Electonic Deliverables: Limit Checker; Standard Excel; Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter Contracting | 454 | Wynn Dredge |

| Contact Person | Address | |
|---|---|---|
| | 95 Behen St. | |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Everett | ~~Everett~~ MA | 02149 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 508-818-0480 | | tlewis@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | EA PAH | Metals | TSS | Turb.d.ty | PH | EPH |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 10/25/17 | 11:15 | Grab | water | Wynn-CC-171025-INF1 | 2 | | | | | |
| 2 | 10/25/17 | 11:15 | grab | water | Wynn-CC-171025-INF2 | | 1 | | | | |
| 3 | 10/25/17 | 11:15 | grab | water | Wynn-CC-171025-INF3 | | | | | | 2 |
| 4 | 10/25/17 | 11:15 | grab | water | Wynn-CC-171025-INF4 | | | 1 | 1 | 1 | |
| 5 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025 ~~[illegible]~~-EFF1 | 2 | | | | | |
| 6 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025-EFF2 | | 1 | | | | |
| 7 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025-EFF3 | | | | | | 2 |
| 8 | 10/25/17 | 11:00 | grab | water | Wynn-CC-171025-EFF4 | | | 1 | 1 | 1 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| Container Type: | AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial | | | | | AG | P | P | P | P | AG |
| Container Volume: | 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* | | | | | | | | | | |
| Preservation Code: | 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* | | | | | 1 | 4 | 1 | 1 | 1 | 1 |
| | | | | | Number of Containers per Sample: | 2 | 3 | 2 | 2 | 2 | |

**Laboratory Use Only**
Cooler Present: yes
Seals Intact: N/A
Cooler Temperature: °C ice temp: 2.0

Sampled by: [signature]
Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 13:16 10/25/17 | [signature] 13:16 10/25/17 | [signature] 17:31 10/25/17 | [signature] 10/25/17 1850 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1711036**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 2:14 pm, Nov 10, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

## SAMPLE RECEIPT

The following samples were received on November 01, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1711036-01 | 171101-Wynn-CC-Influent 1 | Aqueous | 8082A, 8270D |
| 1711036-02 | 171101-Wynn-CC-Influent 2 | Aqueous | 6010C, 6020A, 7010, 7470A |
| 1711036-03 | 171101-Wynn-CC-Influent 3 | Aqueous | EPH8270, MADEP-EPH |
| 1711036-04 | 171101-Wynn-CC-Influent 4 | Aqueous | 2540D, 9040 |
| 1711036-05 | 171101-Wynn-CC-Effluent 1 | Aqueous | 8082A, 8270D |
| 1711036-06 | 171101-Wynn-CC-Effluent 2 | Aqueous | 6010C, 6020A, 7010, 7470A |
| 1711036-07 | 171101-Wynn-CC-Effluent 3 | Aqueous | EPH8270, MADEP-EPH |
| 1711036-08 | 171101-Wynn-CC-Effluent 4 | Aqueous | 2540D, 9040 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

## PROJECT NARRATIVE

**8082A Polychlorinated Biphenyls (PCB)**

1711036-01 **Surrogate recovery(ies) above upper control limit (S+).**
Tetrachloro-m-xylene (249% @ 30-150%)

**8270D Semi-Volatile Organic Compounds**

CK70220-BS1 **Blank Spike recovery is above upper control limit (B+).**
Phenol-d6 (118% @ 15-110%)

**MADEP-EPH Extractable Petroleum Hydrocarbons**

C7K0151-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzo(g,h,i)perylene (38% @ 20%), Dibenzo(a,h)Anthracene (27% @ 20%), Indeno(1,2,3-cd)Pyrene (29% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711036-01 through 1711036-08**

Matrices: (x) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (x) 8260 VOC CAM II A | (x) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (x) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (x) 8270 SVOC CAM II B | (x) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (x) 6010 Metals CAM III A | (x) 6020 Metals CAM III D | (x) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (x) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (x) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (x) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (x) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes (x) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (x) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | Yes (x) No ( )* |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (x)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (x)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard
Date: November 10, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 1
Date Sampled: 11/01/17 13:40
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/2/17 9:50

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| **Aroclor 1248 [2C]** | **1.56** (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| **Aroclor 1254 [2C]** | **1.23** (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| **Aroclor 1260** | **0.28** (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 11/02/17 17:06 | | CK70301 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *40 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *44 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *249 %* | *S+* | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *69 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 1
Date Sampled: 11/01/17 13:40
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/2/17 18:05

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **bis(2-Ethylhexyl)phthalate** | **349** (22.4) | | 8270D | | 4 | 11/07/17 18:07 | C7K0125 | CK70220 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *81 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *82 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *92 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *74 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *85 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *83 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *82 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 2
Date Sampled: 11/01/17 13:40
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (25.0) | | 7010 | | 5 | KJK | 11/09/17 18:04 | 10 | 10 | CK70233 |
| Lead | ND (5.0) | | 6020A | | 5 | NAR | 11/02/17 16:17 | 10 | 10 | CK70233 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 11/02/17 12:06 | 20 | 40 | CK70128 |
| Vanadium | ND (100) | | 6010C | | 5 | KJK | 11/02/17 23:09 | 10 | 10 | CK70233 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 3
Date Sampled: 11/01/17 13:45
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/2/17 14:20

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (99) | | MADEP-EPH | | 1 | ZLC | 11/02/17 21:56 | C7K0030 | CK70213 |
| **C19-C36 Aliphatics1** | **176** (99) | | MADEP-EPH | | 1 | ZLC | 11/02/17 21:56 | C7K0030 | CK70213 |
| C11-C22 Unadjusted Aromatics1 | ND (99.0) | | EPH8270 | | 1 | VSC | 11/03/17 0:07 | C7K0041 | CK70213 |
| C11-C22 Aromatics1,2 | ND (99.0) | | EPH8270 | | | VSC | 11/03/17 0:07 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CK70213 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *75 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *91 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *68 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent 4
Date Sampled: 11/01/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-04
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.35** (N/A) | | 9040 | | 1 | BCA | 11/01/17 21:30 | S.U. | CK70145 |
| **pH Sample Temp** | **Aqueous pH measured in water at 14.7 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **69** (5) | | 2540D | | 1 | EEM | 11/02/17 17:20 | mg/L | CK70210 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 1
Date Sampled: 11/01/17 14:00
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/2/17 9:50

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1221 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1232 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1242 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1248 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1254 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1260 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1262 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |
| Aroclor 1268 | ND (0.10) | | 8082A | | 1 | 11/02/17 14:46 | | CK70103 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *72 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *72 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 1
Date Sampled: 11/01/17 14:00
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/2/17 18:05

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (6.0) | | 8270D | | 1 | 11/07/17 18:41 | C7K0125 | CK70220 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *85 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *82 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *89 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *98 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *80 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *95 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *93 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *124 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 2
Date Sampled: 11/01/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (25.0) | | 7010 | | 5 | KJK | 11/09/17 18:09 | 10 | 10 | CK70233 |
| Lead | ND (5.0) | | 6020A | | 5 | NAR | 11/02/17 16:23 | 10 | 10 | CK70233 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 11/02/17 12:08 | 20 | 40 | CK70128 |
| Vanadium | ND (100) | | 6010C | | 5 | KJK | 11/02/17 23:13 | 10 | 10 | CK70233 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 3
Date Sampled: 11/01/17 13:45
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/2/17 14:20

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (94) | | MADEP-EPH | | 1 | ZLC | 11/02/17 22:43 | C7K0030 | CK70213 |
| C19-C36 Aliphatics1 | ND (94) | | MADEP-EPH | | 1 | ZLC | 11/02/17 22:43 | C7K0030 | CK70213 |
| C11-C22 Unadjusted Aromatics1 | ND (94.3) | | EPH8270 | | 1 | ZLC | 11/08/17 18:47 | C7K0151 | CK70213 |
| C11-C22 Aromatics1,2 | ND (94.3) | | EPH8270 | | | ZLC | 11/08/17 18:47 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CK70213 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *76 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *103 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *100 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *76 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent 4
Date Sampled: 11/01/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711036
ESS Laboratory Sample ID: 1711036-08
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.91** (N/A) | | 9040 | | 1 | BCA | 11/01/17 21:30 | S.U. | CK70145 |
| **pH Sample Temp** | **Aqueous pH measured in water at 14.3 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **36** (5) | | 2540D | | 1 | EEM | 11/02/17 17:20 | mg/L | CK70210 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | | |
| **Batch CK70128 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 5.93 | 0.20 | ug/L | 6.000 | | 99 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 6.03 | 0.20 | ug/L | 6.000 | | 100 | 80-120 | 2 | 20 | |
| **Batch CK70233 - 200.7/6010BNoDigest** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 5.0 | ug/L | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Vanadium | 0.5 | | mg/L | 0.5000 | | 100 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Lead | 21.0 | | ug/L | 20.00 | | 105 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 24.2 | | ug/L | 25.00 | | 97 | 80-120 | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK70103 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CK70103 - 3510C** | | | | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0408* | | ug/L | *0.05000* | | *82* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0423* | | ug/L | *0.05000* | | *85* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0279* | | ug/L | *0.05000* | | *56* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0319* | | ug/L | *0.05000* | | *64* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.83 | 0.10 | ug/L | 1.000 | | 83 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.91 | 0.10 | ug/L | 1.000 | | 91 | 40-140 | | | |
| Aroclor 1260 | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.96 | 0.10 | ug/L | 1.000 | | 96 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0534* | | ug/L | *0.05000* | | *107* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0563* | | ug/L | *0.05000* | | *113* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0400* | | ug/L | *0.05000* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0415* | | ug/L | *0.05000* | | *83* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | 3 | 20 | |
| Aroclor 1016 [2C] | 0.93 | 0.10 | ug/L | 1.000 | | 93 | 40-140 | 2 | 20 | |
| Aroclor 1260 | 0.88 | 0.10 | ug/L | 1.000 | | 88 | 40-140 | 2 | 20 | |
| Aroclor 1260 [2C] | 0.97 | 0.10 | ug/L | 1.000 | | 97 | 40-140 | 1 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0474* | | ug/L | *0.05000* | | *95* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0489* | | ug/L | *0.05000* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0365* | | ug/L | *0.05000* | | *73* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0376* | | ug/L | *0.05000* | | *75* | *30-150* | | | |
| **Batch CK70301 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK70301 - 3510C** | | | | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0421* | | ug/L | *0.05000* | | *84* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0433* | | ug/L | *0.05000* | | *87* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0300* | | ug/L | *0.05000* | | *60* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0338* | | ug/L | *0.05000* | | *68* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 1.02 | 0.10 | ug/L | 1.000 | | 102 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.96 | 0.10 | ug/L | 1.000 | | 96 | 40-140 | | | |
| Aroclor 1260 | 0.98 | 0.10 | ug/L | 1.000 | | 98 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.95 | 0.10 | ug/L | 1.000 | | 95 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0549* | | ug/L | *0.05000* | | *110* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0551* | | ug/L | *0.05000* | | *110* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0427* | | ug/L | *0.05000* | | *85* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0456* | | ug/L | *0.05000* | | *91* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.97 | 0.10 | ug/L | 1.000 | | 97 | 40-140 | 4 | 20 | |
| Aroclor 1016 [2C] | 0.92 | 0.10 | ug/L | 1.000 | | 92 | 40-140 | 4 | 20 | |
| Aroclor 1260 | 0.96 | 0.10 | ug/L | 1.000 | | 96 | 40-140 | 2 | 20 | |
| Aroclor 1260 [2C] | 0.94 | 0.10 | ug/L | 1.000 | | 94 | 40-140 | 0.6 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0478* | | ug/L | *0.05000* | | *96* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0480* | | ug/L | *0.05000* | | *96* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0385* | | ug/L | *0.05000* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0395* | | ug/L | *0.05000* | | *79* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70220 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78.5* | | ug/L | *100.0* | | *79* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *141* | | ug/L | *150.0* | | *94* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *127* | | ug/L | *150.0* | | *85* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *89.3* | | ug/L | *100.0* | | *89* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *124* | | ug/L | *150.0* | | *83* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *89.2* | | ug/L | *100.0* | | *89* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *134* | | ug/L | *150.0* | | *90* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *105* | | ug/L | *100.0* | | *105* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 108 | 6.0 | ug/L | 100.0 | | 108 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81.8* | | ug/L | *100.0* | | *82* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *163* | | ug/L | *150.0* | | *109* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *152* | | ug/L | *150.0* | | *101* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *77.6* | | ug/L | *100.0* | | *78* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70220 - 3520C** | | | | | | | | | | |
| *Surrogate: 2-Fluorophenol* | *124* | | ug/L | *150.0* | | *83* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *91.5* | | ug/L | *100.0* | | *91* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *178* | | ug/L | *150.0* | | *118* | *15-110* | | | *B+* |
| *Surrogate: p-Terphenyl-d14* | *103* | | ug/L | *100.0* | | *103* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 105 | 6.0 | ug/L | 100.0 | | 105 | 40-140 | 2 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *83.3* | | ug/L | *100.0* | | *83* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *158* | | ug/L | *150.0* | | *105* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *121* | | ug/L | *150.0* | | *80* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *94.6* | | ug/L | *100.0* | | *95* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *148* | | ug/L | *150.0* | | *99* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *90.8* | | ug/L | *100.0* | | *91* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *125* | | ug/L | *150.0* | | *83* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *106* | | ug/L | *100.0* | | *106* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CK70210 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 34 | | mg/L | 34.10 | | 100 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CK70213 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *42.9* | | ug/L | *50.00* | | *86* | *40-140* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK70213 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *44.2* | | ug/L | *50.00* | | *88* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *42.0* | | ug/L | *50.00* | | *84* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *38.1* | | ug/L | *50.00* | | *76* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 378 | 100 | ug/L | 400.0 | | 95 | 40-140 | | | |
| C9-C18 Aliphatics1 | 228 | 100 | ug/L | 300.0 | | 76 | 40-140 | | | |
| Decane (C10) | 32 | 5 | ug/L | 50.00 | | 65 | 40-140 | | | |
| Docosane (C22) | 48 | 5 | ug/L | 50.00 | | 95 | 40-140 | | | |
| Dodecane (C12) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Eicosane (C20) | 47 | 5 | ug/L | 50.00 | | 94 | 40-140 | | | |
| Hexacosane (C26) | 48 | 5 | ug/L | 50.00 | | 97 | 40-140 | | | |
| Hexadecane (C16) | 43 | 5 | ug/L | 50.00 | | 87 | 40-140 | | | |
| Hexatriacontane (C36) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | | | |
| Nonadecane (C19) | 47 | 5 | ug/L | 50.00 | | 95 | 40-140 | | | |
| Nonane (C9) | 26 | 5 | ug/L | 50.00 | | 52 | 30-140 | | | |
| Octacosane (C28) | 49 | 5 | ug/L | 50.00 | | 98 | 40-140 | | | |
| Octadecane (C18) | 45 | 5 | ug/L | 50.00 | | 89 | 40-140 | | | |
| Tetracosane (C24) | 48 | 5 | ug/L | 50.00 | | 96 | 40-140 | | | |
| Tetradecane (C14) | 40 | 5 | ug/L | 50.00 | | 81 | 40-140 | | | |
| Triacontane (C30) | 50 | 5 | ug/L | 50.00 | | 100 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *44.8* | | ug/L | *50.00* | | *90* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 35.9 | 5.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Acenaphthene | 39.1 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK70213 - 3510C** | | | | | | | | | | |
| Acenaphthylene | 40.6 | 5.0 | ug/L | 50.00 | | 81 | 40-140 | | | |
| Anthracene | 42.4 | 5.0 | ug/L | 50.00 | | 85 | 40-140 | | | |
| Benzo(a)anthracene | 42.2 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Benzo(a)pyrene | 41.8 | 10.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Benzo(b)fluoranthene | 42.0 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Benzo(g,h,i)perylene | 37.9 | 10.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Benzo(k)fluoranthene | 42.4 | 10.0 | ug/L | 50.00 | | 85 | 40-140 | | | |
| C11-C22 Aromatics1,2 | 127 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 814 | 100 | ug/L | 850.0 | | 96 | 40-140 | | | |
| Chrysene | 40.8 | 10.0 | ug/L | 50.00 | | 82 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 39.8 | 5.0 | ug/L | 50.00 | | 80 | 40-140 | | | |
| Fluoranthene | 40.7 | 10.0 | ug/L | 50.00 | | 81 | 40-140 | | | |
| Fluorene | 39.1 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 42.0 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Naphthalene | 39.4 | 10.0 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Phenanthrene | 40.7 | 5.0 | ug/L | 50.00 | | 81 | 40-140 | | | |
| Pyrene | 41.1 | 5.0 | ug/L | 50.00 | | 82 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *45.6* | | ug/L | *50.00* | | *91* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *44.8* | | ug/L | *50.00* | | *90* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *39.2* | | ug/L | *50.00* | | *78* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 346 | 100 | ug/L | 400.0 | | 87 | 40-140 | 9 | 25 | |
| C9-C18 Aliphatics1 | 194 | 100 | ug/L | 300.0 | | 65 | 40-140 | 16 | 25 | |
| Decane (C10) | 26 | 5 | ug/L | 50.00 | | 52 | 40-140 | 22 | 25 | |
| Docosane (C22) | 44 | 5 | ug/L | 50.00 | | 88 | 40-140 | 8 | 25 | |
| Dodecane (C12) | 31 | 5 | ug/L | 50.00 | | 61 | 40-140 | 18 | 25 | |
| Eicosane (C20) | 43 | 5 | ug/L | 50.00 | | 87 | 40-140 | 9 | 25 | |
| Hexacosane (C26) | 44 | 5 | ug/L | 50.00 | | 89 | 40-140 | 8 | 25 | |
| Hexadecane (C16) | 37 | 5 | ug/L | 50.00 | | 75 | 40-140 | 15 | 25 | |
| Hexatriacontane (C36) | 41 | 5 | ug/L | 50.00 | | 83 | 40-140 | 8 | 25 | |
| Nonadecane (C19) | 43 | 5 | ug/L | 50.00 | | 86 | 40-140 | 9 | 25 | |
| Nonane (C9) | 20 | 5 | ug/L | 50.00 | | 41 | 30-140 | 24 | 25 | |
| Octacosane (C28) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | 8 | 25 | |
| Octadecane (C18) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | 11 | 25 | |
| Tetracosane (C24) | 44 | 5 | ug/L | 50.00 | | 89 | 40-140 | 8 | 25 | |
| Tetradecane (C14) | 34 | 5 | ug/L | 50.00 | | 69 | 40-140 | 16 | 25 | |
| Triacontane (C30) | 46 | 5 | ug/L | 50.00 | | 92 | 40-140 | 8 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *42.6* | | ug/L | *50.00* | | *85* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 32.0 | 5.0 | ug/L | 50.00 | | 64 | 40-140 | 12 | 20 | |
| Acenaphthene | 33.7 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | 15 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711036

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK70213 - 3510C** | | | | | | | | | | |
| Acenaphthylene | 34.9 | 5.0 | ug/L | 50.00 | | 70 | 40-140 | 15 | 20 | |
| Anthracene | 36.0 | 5.0 | ug/L | 50.00 | | 72 | 40-140 | 16 | 20 | |
| Benzo(a)anthracene | 35.5 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | 17 | 20 | |
| Benzo(a)pyrene | 35.3 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | 17 | 20 | |
| Benzo(b)fluoranthene | 35.6 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | 17 | 20 | |
| Benzo(g,h,i)perylene | 33.7 | 10.0 | ug/L | 50.00 | | 67 | 40-140 | 12 | 20 | |
| Benzo(k)fluoranthene | 35.7 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | 17 | 20 | |
| C11-C22 Aromatics1,2 | 107 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 699 | 100 | ug/L | 850.0 | | 82 | 40-140 | 15 | 25 | |
| Chrysene | 35.6 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | 13 | 20 | |
| Dibenzo(a,h)Anthracene | 34.5 | 5.0 | ug/L | 50.00 | | 69 | 40-140 | 14 | 20 | |
| Fluoranthene | 35.2 | 10.0 | ug/L | 50.00 | | 70 | 40-140 | 15 | 20 | |
| Fluorene | 33.7 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | 15 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 36.8 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | 13 | 20 | |
| Naphthalene | 34.6 | 10.0 | ug/L | 50.00 | | 69 | 40-140 | 13 | 20 | |
| Phenanthrene | 34.0 | 5.0 | ug/L | 50.00 | | 68 | 40-140 | 18 | 20 | |
| Pyrene | 35.5 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | 15 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *44.7* | | ug/L | *50.00* | | *89* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *44.7* | | ug/L | *50.00* | | *89* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *35.4* | | ug/L | *50.00* | | *71* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging ESS Laboratory Work Order: 1711036

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 14.7 ºC. |
| Z16 | Aqueous pH measured in water at 14.3 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| S+ | Surrogate recovery(ies) above upper control limit (S+). |
| D | Diluted. |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| B+ | Blank Spike recovery is above upper control limit (B+). |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711036

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711036
Date Received: 11/1/2017
Project Due Date: 11/8/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.5 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 177787 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 177788 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 177794 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 03 | 177790 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 04 | 177792 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 04 | 177960 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 05 | 177783 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 177784 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 06 | 177793 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 07 | 177789 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 08 | 177791 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 08 | 177959 | Yes | NA | Yes | 1L Poly - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 11/1/17 1950
Reviewed By: Date & Time: 11/1/17 2004
Delivered By: 11/1/17 2004

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1711036

Turn Time (5-Day) Rush

Regulatory State

Reporting Limits NRWQC(SW)

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Electonic Deliverables ☐Limit Checker ☑Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| SPS New England/ Charter Contracting Co, LLC | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Katherine Mason | 98 Elm St |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Salisbury | MA | 01952 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 617-608-7317 | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | Dissolved Metals (Arsenic, Lead, Mercury, Vanadium) | TSS | pH | EPH | PCBs | sVOCs (2-ethylhexyl phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/1/17 | 13:40 | Grab | Aqueous | 171101-Wynn-CC-Influent-1 | | | | | 2 | 2 |
| 02 | 11/1/17 | 13:40 | Grab | Aqueous | 171101-Wynn-CC-Influent-2 | 1 | | | | | |
| 03 | 11/1/17 | 13:45 | Grab | Aqueous | 171101-Wynn-CC-Influent-3 | | | | 2 | | |
| 04 | 11/1/17 | 13:45 | Grab | Aqueous | 171101-Wynn-CC-Influent-4 | | 1 | 1 | | | |
| 05 | 11/1/17 | 14:00 | Grab | Aqueous | 171101-Wynn-CC-Effluent-1 | | | | | 2 | 2 |
| 06 | 11/1/17 | 13:45 | Grab | Aqueous | 171101-Wynn-CC-Effluent-2 | 1 | | | | | |
| 07 | 11/1/17 | 13:45 | Grab | Aqueous | 171101-Wynn-CC-Effluent-3 | | | | 2 | | |
| 08 | 11/1/17 | 13:45 | Grab | Aqueous | 171101-Wynn-CC-Effluent-4 | | 1 | 1 | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Container Type: | AC-Air Cassette | AG-Amber Glass | B-BOD Bottle | C-Cubitainer | G - Glass | O-Other | P-Poly | S-Sterile | V-Vial | P | P | P | AG | AG | AG |
| Container Volume: | 1-100 mL | 2-2.5 gal | 3-250 mL | 4-300 mL | 5-500 mL | 6-1L | 7-VOA | 8-2 oz | 9-4 oz | 10-8 oz | 11-Other* | 3 | 6 | 6 | 6 | 6 | 6 |
| Preservation Code: | 1-Non Preserved | 2-HCl | 3-H2SO4 | 4-HNO3 | 5-NaOH | 6-Methanol | 7-Na2S2O3 | 8-ZnAce, NaOH | 9-NH4Cl | 10-DI H2O | 11-Other* | 1 | 1 | 1 | 2 | 1 | 1 |
| Number of Containers per Sample: | | | | | | | | | | | | | | | | | |

**Laboratory Use Only**

Cooler Present: Yes

Seals Intact: NA

Cooler Temperature: °C ice temp: 1.5

Sampled by : Meghan Clifford

Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 11/1/17 15:26 | [signature] 11/1/17 15:26 | [signature] 11/1/17 18:41 | [signature] 11/1/17 1945 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1711289**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 4:25 pm, Nov 17, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

## SAMPLE RECEIPT

The following samples were received on November 09, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1711289-01 | 171101-Wynn-CC-Influent-1 | Aqueous | 8082A, 8270D |
| 1711289-02 | 171101-Wynn-CC-Influent-2 | Aqueous | 6010C, 6020A, 7010, 7470A |
| 1711289-03 | 171101-Wynn-CC-Influent-3 | Aqueous | EPH8270, MADEP-EPH |
| 1711289-04 | 171101-Wynn-CC-Influent-4 | Aqueous | 2540D, 9040 |
| 1711289-05 | 171101-Wynn-CC-Effluent-1 | Aqueous | 8082A, 8270D |
| 1711289-06 | 171101-Wynn-CC-Effluent-2 | Aqueous | 6010C, 6020A, 7010, 7470A |
| 1711289-07 | 171101-Wynn-CC-Effluent-3 | Aqueous | EPH8270, MADEP-EPH |
| 1711289-08 | 171101-Wynn-CC-Effluent-4 | Aqueous | 2540D, 9040 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711289

## PROJECT NARRATIVE

**8082A Polychlorinated Biphenyls (PCB)**

1711289-01 **Lower value is used due to matrix interferences (LC).**
Aroclor 1260 [2C]

1711289-01 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1260 [2C]

**8270D Semi-Volatile Organic Compounds**

C7K0194-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Chlorophenol-d4 (26% @ 20%)

**MADEP-EPH Extractable Petroleum Hydrocarbons**

C7K0240-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Dibenzo(a,h)Anthracene (21% @ 20%)

CK71003-BSD2 **Relative percent difference for duplicate is outside of criteria (D+).**
2-Methylnaphthalene (21% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711289-01 through 1711289-08**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (X) Other: Aqueous

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| ( ) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | (X) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | (X) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes (X) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for '"Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (X)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard Date: November 17, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/10/17 9:43

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| **Aroclor 1242** | **0.35** (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| **Aroclor 1254** | **2.80** (0.47) | | 8082A | | 5 | 11/10/17 14:46 | | CK70903 |
| **Aroclor 1260 [2C]** | **LC, P 0.14** (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:21 | | CK70903 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *58 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *46 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *67 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *53 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/10/17 16:05

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **bis(2-Ethylhexyl)phthalate** | **382** (56.1) | | 8270D | | 10 | 11/14/17 23:27 | C7K0194 | CK70932 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *89 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *86 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *63 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *85 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *70 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *47 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-2
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (5.0) | | 7010 | | 1 | KJK | 11/15/17 4:52 | 10 | 10 | CK71024 |
| Lead | ND (5.0) | | 6020A | | 5 | NAR | 11/16/17 14:41 | 10 | 10 | CK71024 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 11/14/17 12:42 | 20 | 40 | CK70960 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 11/10/17 15:41 | 10 | 10 | CK71024 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-3
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/10/17 11:50

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/14/17 21:19 | C7K0201 | CK71003 |
| **C19-C36 Aliphatics1** | **400** (93) | | MADEP-EPH | | 1 | ZLC | 11/14/17 21:19 | C7K0201 | CK71003 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | VSC | 11/15/17 10:24 | C7K0240 | CK71003 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | VSC | 11/15/17 10:24 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CK71003 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *99 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *108 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *113 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *77 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-4
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-04
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.61** (N/A) | | 9040 | | 1 | BCA | 11/09/17 22:19 | S.U. | CK70950 |
| **pH Sample Temp** | **Aqueous pH measured in water at 10.8 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **165** (5) | | 2540D | | 1 | JLK | 11/13/17 21:51 | mg/L | CK71340 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/10/17 9:43

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1254 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1260 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 11/10/17 12:38 | | CK70903 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *91 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *93 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *93 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 11/10/17 16:05

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| **bis(2-Ethylhexyl)phthalate** | **7.1** (6.0) | | 8270D | | 1 | 11/13/17 22:10 | C7K0194 | CK70932 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *85 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *84 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *94 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *75 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *86 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *87 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *100 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-2
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (5.0) | | 7010 | | 1 | KJK | 11/11/17 16:33 | 10 | 10 | CK71024 |
| Lead | ND (5.0) | | 6020A | | 5 | NAR | 11/16/17 14:47 | 10 | 10 | CK71024 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 11/14/17 12:54 | 20 | 40 | CK70960 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 11/10/17 15:46 | 10 | 10 | CK71024 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-3
Date Sampled: 11/09/17 13:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/10/17 11:50

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/10/17 23:47 | C7K0175 | CK71003 |
| C19-C36 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/10/17 23:47 | C7K0175 | CK71003 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | VSC | 11/15/17 10:58 | C7K0240 | CK71003 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | VSC | 11/15/17 10:58 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CK71003 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *67 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *106 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *111 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *78 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-4
Date Sampled: 11/09/17 13:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711289
ESS Laboratory Sample ID: 1711289-08
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **8.07** (N/A) | | 9040 | | 1 | BCA | 11/09/17 22:19 | S.U. | CK70950 |
| **pH Sample Temp** | **Aqueous pH measured in water at 10.2 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **13** (5) | | 2540D | | 1 | JLK | 11/13/17 21:51 | mg/L | CK71340 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | | |
| **Batch CK70960 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 6.02 | 0.20 | ug/L | 6.000 | | 100 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 5.27 | 0.20 | ug/L | 6.000 | | 88 | 80-120 | 13 | 20 | |
| **Batch CK71024 - 200.7/6010BNoDigest** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 5.0 | ug/L | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 5.0 | ug/L | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Vanadium | 0.5 | | mg/L | 0.5000 | | 102 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Lead | 21.3 | | ug/L | 20.00 | | 107 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 24.8 | | ug/L | 25.00 | | 99 | 80-120 | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK70903 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711289

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK70903 - 3510C** | | | | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0337* | | ug/L | *0.05000* | | *67* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0372* | | ug/L | *0.05000* | | *74* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0260* | | ug/L | *0.05000* | | *52* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0294* | | ug/L | *0.05000* | | *59* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.83 | 0.10 | ug/L | 1.000 | | 83 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.84 | 0.10 | ug/L | 1.000 | | 84 | 40-140 | | | |
| Aroclor 1260 | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.84 | 0.10 | ug/L | 1.000 | | 84 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0449* | | ug/L | *0.05000* | | *90* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0468* | | ug/L | *0.05000* | | *94* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0366* | | ug/L | *0.05000* | | *73* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0352* | | ug/L | *0.05000* | | *70* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.87 | 0.10 | ug/L | 1.000 | | 87 | 40-140 | 4 | 20 | |
| Aroclor 1016 [2C] | 0.88 | 0.10 | ug/L | 1.000 | | 88 | 40-140 | 5 | 20 | |
| Aroclor 1260 | 0.91 | 0.10 | ug/L | 1.000 | | 91 | 40-140 | 5 | 20 | |
| Aroclor 1260 [2C] | 0.89 | 0.10 | ug/L | 1.000 | | 89 | 40-140 | 6 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0457* | | ug/L | *0.05000* | | *91* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0491* | | ug/L | *0.05000* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0387* | | ug/L | *0.05000* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0376* | | ug/L | *0.05000* | | *75* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70932 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74.8* | | ug/L | *100.0* | | *75* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *108* | | ug/L | *150.0* | | *72* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *111* | | ug/L | *150.0* | | *74* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *80.6* | | ug/L | *100.0* | | *81* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *117* | | ug/L | *150.0* | | *78* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *74.4* | | ug/L | *100.0* | | *74* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *115* | | ug/L | *150.0* | | *76* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *114* | | ug/L | *100.0* | | *114* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 80.6 | 6.0 | ug/L | 100.0 | | 81 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74.8* | | ug/L | *100.0* | | *75* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *129* | | ug/L | *150.0* | | *86* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *95.4* | | ug/L | *150.0* | | *64* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *85.9* | | ug/L | *100.0* | | *86* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *77.9* | | ug/L | *150.0* | | *52* | *15-110* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70932 - 3520C** | | | | | | | | | | |
| *Surrogate: Nitrobenzene-d5* | *91.2* | | ug/L | *100.0* | | *91* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *96.7* | | ug/L | *150.0* | | *64* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *86.6* | | ug/L | *100.0* | | *87* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 85.8 | 6.0 | ug/L | 100.0 | | 86 | 40-140 | 6 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81.7* | | ug/L | *100.0* | | *82* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *142* | | ug/L | *150.0* | | *94* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *114* | | ug/L | *150.0* | | *76* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *95.2* | | ug/L | *100.0* | | *95* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *92.4* | | ug/L | *150.0* | | *62* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *97.8* | | ug/L | *100.0* | | *98* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *114* | | ug/L | *150.0* | | *76* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *97.5* | | ug/L | *100.0* | | *97* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CK71340 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 32 | | mg/L | 34.10 | | 94 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CK71003 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *35.8* | | ug/L | *50.00* | | *72* | *40-140* | | | |
| **Blank** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK71003 - 3510C** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *45.3* | | ug/L | *50.00* | | *91* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *41.2* | | ug/L | *50.00* | | *82* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *36.9* | | ug/L | *50.00* | | *74* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 321 | 100 | ug/L | 400.0 | | 80 | 40-140 | | | |
| C9-C18 Aliphatics1 | 198 | 100 | ug/L | 300.0 | | 66 | 40-140 | | | |
| Decane (C10) | 28 | 5 | ug/L | 50.00 | | 56 | 40-140 | | | |
| Docosane (C22) | 36 | 5 | ug/L | 50.00 | | 73 | 40-140 | | | |
| Dodecane (C12) | 27 | 5 | ug/L | 50.00 | | 54 | 40-140 | | | |
| Eicosane (C20) | 36 | 5 | ug/L | 50.00 | | 73 | 40-140 | | | |
| Hexacosane (C26) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Hexadecane (C16) | 36 | 5 | ug/L | 50.00 | | 71 | 40-140 | | | |
| Hexatriacontane (C36) | 39 | 5 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Nonadecane (C19) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Nonane (C9) | 23 | 5 | ug/L | 50.00 | | 46 | 30-140 | | | |
| Octacosane (C28) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Octadecane (C18) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | | | |
| Tetracosane (C24) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Tetradecane (C14) | 34 | 5 | ug/L | 50.00 | | 67 | 40-140 | | | |
| Triacontane (C30) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *34.1* | | ug/L | *50.00* | | *68* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 35.2 | 5.0 | ug/L | 50.00 | | 70 | 40-140 | | | |
| Acenaphthene | 36.0 | 5.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Acenaphthylene | 37.3 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK71003 - 3510C** | | | | | | | | | | |
| Anthracene | 37.0 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Benzo(a)anthracene | 36.4 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | | | |
| Benzo(a)pyrene | 34.3 | 10.0 | ug/L | 50.00 | | 69 | 40-140 | | | |
| Benzo(b)fluoranthene | 35.8 | 5.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Benzo(g,h,i)perylene | 34.2 | 10.0 | ug/L | 50.00 | | 68 | 40-140 | | | |
| Benzo(k)fluoranthene | 35.7 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | | | |
| C11-C22 Aromatics1,2 | 158 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 769 | 100 | ug/L | 850.0 | | 90 | 40-140 | | | |
| Chrysene | 35.6 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 33.4 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | | | |
| Fluoranthene | 35.5 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | | | |
| Fluorene | 37.5 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 36.8 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Naphthalene | 36.8 | 10.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Phenanthrene | 36.9 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Pyrene | 36.6 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *45.0* | | ug/L | *50.00* | | *90* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *46.1* | | ug/L | *50.00* | | *92* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *38.6* | | ug/L | *50.00* | | *77* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 301 | 100 | ug/L | 400.0 | | 75 | 40-140 | 7 | 25 | |
| C9-C18 Aliphatics1 | 183 | 100 | ug/L | 300.0 | | 61 | 40-140 | 8 | 25 | |
| Decane (C10) | 24 | 5 | ug/L | 50.00 | | 48 | 40-140 | 15 | 25 | |
| Docosane (C22) | 35 | 5 | ug/L | 50.00 | | 69 | 40-140 | 5 | 25 | |
| Dodecane (C12) | 24 | 5 | ug/L | 50.00 | | 48 | 40-140 | 13 | 25 | |
| Eicosane (C20) | 35 | 5 | ug/L | 50.00 | | 69 | 40-140 | 5 | 25 | |
| Hexacosane (C26) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | 5 | 25 | |
| Hexadecane (C16) | 34 | 5 | ug/L | 50.00 | | 68 | 40-140 | 5 | 25 | |
| Hexatriacontane (C36) | 37 | 5 | ug/L | 50.00 | | 73 | 40-140 | 5 | 25 | |
| Nonadecane (C19) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | 5 | 25 | |
| Nonane (C9) | 20 | 5 | ug/L | 50.00 | | 39 | 30-140 | 15 | 25 | |
| Octacosane (C28) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | 5 | 25 | |
| Octadecane (C18) | 33 | 5 | ug/L | 50.00 | | 67 | 40-140 | 5 | 25 | |
| Tetracosane (C24) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | 5 | 25 | |
| Tetradecane (C14) | 32 | 5 | ug/L | 50.00 | | 63 | 40-140 | 6 | 25 | |
| Triacontane (C30) | 35 | 5 | ug/L | 50.00 | | 71 | 40-140 | 5 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *33.1* | | ug/L | *50.00* | | *66* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 28.5 | 5.0 | ug/L | 50.00 | | 57 | 40-140 | 21 | 20 | D+ |
| Acenaphthene | 32.6 | 5.0 | ug/L | 50.00 | | 65 | 40-140 | 10 | 20 | |
| Acenaphthylene | 33.3 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | 11 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK71003 - 3510C** | | | | | | | | | | |
| Anthracene | 33.3 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | 11 | 20 | |
| Benzo(a)anthracene | 32.3 | 5.0 | ug/L | 50.00 | | 65 | 40-140 | 12 | 20 | |
| Benzo(a)pyrene | 30.7 | 10.0 | ug/L | 50.00 | | 61 | 40-140 | 11 | 20 | |
| Benzo(b)fluoranthene | 31.4 | 5.0 | ug/L | 50.00 | | 63 | 40-140 | 13 | 20 | |
| Benzo(g,h,i)perylene | 28.9 | 10.0 | ug/L | 50.00 | | 58 | 40-140 | 17 | 20 | |
| Benzo(k)fluoranthene | 32.0 | 10.0 | ug/L | 50.00 | | 64 | 40-140 | 11 | 20 | |
| C11-C22 Aromatics1,2 | 130 | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 665 | 100 | ug/L | 850.0 | | 78 | 40-140 | 15 | 25 | |
| Chrysene | 32.2 | 10.0 | ug/L | 50.00 | | 64 | 40-140 | 10 | 20 | |
| Dibenzo(a,h)Anthracene | 29.7 | 5.0 | ug/L | 50.00 | | 59 | 40-140 | 12 | 20 | |
| Fluoranthene | 30.9 | 10.0 | ug/L | 50.00 | | 62 | 40-140 | 14 | 20 | |
| Fluorene | 33.1 | 5.0 | ug/L | 50.00 | | 66 | 40-140 | 13 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 31.2 | 5.0 | ug/L | 50.00 | | 62 | 40-140 | 17 | 20 | |
| Naphthalene | 31.1 | 10.0 | ug/L | 50.00 | | 62 | 40-140 | 17 | 20 | |
| Phenanthrene | 32.4 | 5.0 | ug/L | 50.00 | | 65 | 40-140 | 13 | 20 | |
| Pyrene | 31.5 | 5.0 | ug/L | 50.00 | | 63 | 40-140 | 15 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *45.3* | | ug/L | *50.00* | | *91* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *44.8* | | ug/L | *50.00* | | *90* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *33.4* | | ug/L | *50.00* | | *67* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711289

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 10.8 ºC. |
| Z16 | Aqueous pH measured in water at 10.2 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| P | Percent difference between primary and confirmation results exceeds 40% (P). |
| LC | Lower value is used due to matrix interferences (LC). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD+ | Continuing Calibration %Diff/Drift is above control limit (CD+). |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711289

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711289
Date Received: 11/9/2017
Project Due Date: 11/16/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 181232 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 181233 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 181235 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 03 | 181237 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 04 | 181240 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 04 | 181241 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 05 | 181230 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 181231 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 06 | 181234 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 07 | 181236 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 08 | 181238 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 08 | 181239 | Yes | NA | Yes | 1L Poly - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 11/9/17 2202
Reviewed By: Date & Time: 11/9/17 2211
Delivered By: 11/9/17 2211

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

**ESS Lab #** 1711289

**Turn Time** 5-Day (circled) **Rush**

**Regulatory State**

**Is this project for any of the following?:** ○ CT RCP ○ MA MCP ○ RGP

**Reporting Limits** NRWQC(SW)

**Electonic Deliverables** ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| SPS New England/ Charter Contracting Co, LLC | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Katherine Mason | 98 Elm St |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Salisbury | MA | 01952 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 617-608-7317 | | kmason@charter.us |

**Analysis**

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | Dissolved Metals (Arsenic, Lead, Mercury, Vanadium) | TSS | pH | EPH | PCBs | sVOCs (2-ethylhexyl phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Influent-1 | | | | | 2 | 2 |
| 02 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Influent-2 | 1 | | | | | |
| 03 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Influent-3 | | | | 2 | | |
| 04 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Influent-4 | | 1 | 1 | | | |
| 05 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Effluent-1 | | | | | 2 | 2 |
| 06 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Effluent-2 | 1 | | | | | |
| 07 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Effluent-3 | | | | 2 | | |
| 08 | 11/9/17 | | Grab | Aqueous | 171101-Wynn-CC-Effluent-4 | | 1 | 1 | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Container Type:** | AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial | P | P | P | AG | AG | AG |
| **Container Volume:** | 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* | 3 | 6 | 6 | 6 | 6 | 6 |
| **Preservation Code:** | 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* | 1 | 1 | 1 | 2 | 1 | 1 |
| | **Number of Containers per Sample:** | | | | | | |

**Laboratory Use Only**

Cooler Present: Yes
Seals Intact: NA
Cooler Temperature: °C ice temp: 1.3

**Sampled by :** Meghan Clifford

**Comments:** **Please specify "Other" preservative and containers types in this space**

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 11/9/17 14:10 | [signature] 11/9/17 14:10 | [signature] 11/9/17 20:08 | [signature] 11/9/17 2147 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1711467**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 5:17 pm, Nov 17, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

## SAMPLE RECEIPT

The following samples were received on November 15, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, SVOA and EPH were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1711467-01 | 171101-Wynn-CC-Influent-1 | Aqueous | 8082A |
| 1711467-02 | 171101-Wynn-CC-Influent-2 | Aqueous | 6010C, 6020A, 7470A |
| 1711467-03 | 171101-Wynn-CC-Influent-3 | Aqueous | EPH8270, MADEP-EPH |
| 1711467-04 | 171101-Wynn-CC-Influent-4 | Aqueous | 2540D, 9040 |
| 1711467-05 | 171101-Wynn-CC-Effluent-1 | Aqueous | 8082A |
| 1711467-06 | 171101-Wynn-CC-Effluent-2 | Aqueous | 6010C, 6020A, 7470A |
| 1711467-07 | 171101-Wynn-CC-Effluent-3 | Aqueous | EPH8270, MADEP-EPH |
| 1711467-08 | 171101-Wynn-CC-Effluent-4 | Aqueous | 2540D, 9040 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

## PROJECT NARRATIVE

**No unusual observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 11/15/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/16/17 9:27

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1254 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1260 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:38 | | CK71506 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *76 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *60 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *70 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-2
Date Sampled: 11/15/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND (5.0) | | 6020A | | 5 | NAR | 11/16/17 16:32 | 10 | 10 | CK71625 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 11/16/17 15:21 | 20 | 40 | CK71538 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 11/16/17 14:12 | 10 | 10 | CK71625 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-3
Date Sampled: 11/15/17 11:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/16/17 13:45

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/17/17 12:36 | C7K0300 | CK71604 |
| C19-C36 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/17/17 12:36 | C7K0300 | CK71604 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | ZLC | 11/17/17 13:43 | C7K0298 | CK71604 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | ZLC | 11/17/17 13:43 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | IBM | | | CK71604 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *53 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *109 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *112 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *74 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-4
Date Sampled: 11/15/17 11:00
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-04
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.14** (N/A) | | 9040 | | 1 | BCA | 11/15/17 21:40 | S.U. | CK71549 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.4 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **36** (5) | | 2540D | | 1 | EEM | 11/16/17 17:15 | mg/L | CK71609 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 11/15/17 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 11/16/17 9:27

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1254 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1260 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 11/16/17 10:56 | | CK71506 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *97 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *82 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *98 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-2
Date Sampled: 11/15/17 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND (5.0) | | 6020A | | 5 | NAR | 11/16/17 16:38 | 10 | 10 | CK71625 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 11/16/17 15:28 | 20 | 40 | CK71538 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 11/16/17 14:17 | 10 | 10 | CK71625 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-3
Date Sampled: 11/15/17 10:45
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 11/16/17 13:45

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/17/17 13:23 | C7K0300 | CK71604 |
| C19-C36 Aliphatics1 | ND (93) | | MADEP-EPH | | 1 | ZLC | 11/17/17 13:23 | C7K0300 | CK71604 |
| C11-C22 Unadjusted Aromatics1 | ND (93.5) | | EPH8270 | | 1 | ZLC | 11/17/17 14:17 | C7K0298 | CK71604 |
| C11-C22 Aromatics1,2 | ND (93.5) | | EPH8270 | | | ZLC | 11/17/17 14:17 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | IBM | | | CK71604 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *63 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *111 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *108 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *80 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-4
Date Sampled: 11/15/17 10:45
Percent Solids: N/A

ESS Laboratory Work Order: 1711467
ESS Laboratory Sample ID: 1711467-08
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.91** (N/A) | | 9040 | | 1 | BCA | 11/15/17 21:40 | S.U. | CK71549 |
| **pH Sample Temp** | **Aqueous pH measured in water at 14.9 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **43** (5) | | 2540D | | 1 | EEM | 11/16/17 17:15 | mg/L | CK71609 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | | |
| **Batch CK71538 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 5.89 | 0.20 | ug/L | 6.000 | | 98 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 6.03 | 0.20 | ug/L | 6.000 | | 100 | 80-120 | 2 | 20 | |
| **Batch CK71625 - 200.7/6010BNoDigest** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Vanadium | 0.5 | | mg/L | 0.5000 | | 98 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Lead | 19.5 | | ug/L | 20.28 | | 96 | 80-120 | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK71506 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0446* | | ug/L | *0.05000* | | *89* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0480* | | ug/L | *0.05000* | | *96* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0283* | | ug/L | *0.05000* | | *57* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0323* | | ug/L | *0.05000* | | *65* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK71506 - 3510C** | | | | | | | | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.85 | 0.10 | ug/L | 1.000 | | 85 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | | | |
| Aroclor 1260 | 0.90 | 0.10 | ug/L | 1.000 | | 90 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.85 | 0.10 | ug/L | 1.000 | | 85 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0469* | | ug/L | *0.05000* | | *94* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0499* | | ug/L | *0.05000* | | *100* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0360* | | ug/L | *0.05000* | | *72* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0357* | | ug/L | *0.05000* | | *71* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | 0.4 | 20 | |
| Aroclor 1016 [2C] | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | 0.1 | 20 | |
| Aroclor 1260 | 0.90 | 0.10 | ug/L | 1.000 | | 90 | 40-140 | 0.1 | 20 | |
| Aroclor 1260 [2C] | 0.85 | 0.10 | ug/L | 1.000 | | 85 | 40-140 | 0.8 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0437* | | ug/L | *0.05000* | | *87* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0462* | | ug/L | *0.05000* | | *92* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0332* | | ug/L | *0.05000* | | *66* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0335* | | ug/L | *0.05000* | | *67* | *30-150* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CK71609 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 32 | | mg/L | 34.10 | | 94 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CK71604 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK71604 - 3510C** | | | | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *34.6* | | ug/L | *50.00* | | *69* | *40-140* | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *60.6* | | mg/L | *50.00* | | *121* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *61.8* | | mg/L | *50.00* | | *124* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *42.8* | | ug/L | *50.00* | | *86* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 398 | 100 | ug/L | 400.0 | | 99 | 40-140 | | | |
| C9-C18 Aliphatics1 | 234 | 100 | ug/L | 300.0 | | 78 | 40-140 | | | |
| Decane (C10) | 33 | 5 | ug/L | 50.00 | | 65 | 40-140 | | | |
| Docosane (C22) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | | | |
| Dodecane (C12) | 32 | 5 | ug/L | 50.00 | | 64 | 40-140 | | | |
| Eicosane (C20) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | | | |
| Hexacosane (C26) | 46 | 5 | ug/L | 50.00 | | 92 | 40-140 | | | |
| Hexadecane (C16) | 43 | 5 | ug/L | 50.00 | | 86 | 40-140 | | | |
| Hexatriacontane (C36) | 47 | 5 | ug/L | 50.00 | | 94 | 40-140 | | | |
| Nonadecane (C19) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | | | |
| Nonane (C9) | 26 | 5 | ug/L | 50.00 | | 52 | 30-140 | | | |
| Octacosane (C28) | 46 | 5 | ug/L | 50.00 | | 92 | 40-140 | | | |
| Octadecane (C18) | 42 | 5 | ug/L | 50.00 | | 85 | 40-140 | | | |
| Tetracosane (C24) | 46 | 5 | ug/L | 50.00 | | 91 | 40-140 | | | |
| Tetradecane (C14) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | | | |
| Triacontane (C30) | 46 | 5 | ug/L | 50.00 | | 93 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK71604 - 3510C** | | | | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *40.0* | | ug/L | *50.00* | | *80* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 34.1 | 5.0 | ug/L | 50.00 | | 68 | 40-140 | | | |
| Acenaphthene | 37.1 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Acenaphthylene | 36.7 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | | | |
| Anthracene | 38.4 | 5.0 | ug/L | 50.00 | | 77 | 40-140 | | | |
| Benzo(a)anthracene | 37.2 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Benzo(a)pyrene | 33.0 | 10.0 | ug/L | 50.00 | | 66 | 40-140 | | | |
| Benzo(b)fluoranthene | 37.9 | 5.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Benzo(g,h,i)perylene | 33.5 | 10.0 | ug/L | 50.00 | | 67 | 40-140 | | | |
| Benzo(k)fluoranthene | 37.4 | 10.0 | ug/L | 50.00 | | 75 | 40-140 | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 630 | 100 | ug/L | 850.0 | | 74 | 40-140 | | | |
| Chrysene | 35.8 | 10.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 32.5 | 5.0 | ug/L | 50.00 | | 65 | 40-140 | | | |
| Fluoranthene | 38.3 | 10.0 | ug/L | 50.00 | | 77 | 40-140 | | | |
| Fluorene | 38.0 | 5.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 38.9 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Naphthalene | 35.8 | 10.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Phenanthrene | 37.6 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | | | |
| Pyrene | 38.1 | 5.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *54.5* | | mg/L | *50.00* | | *109* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *57.5* | | mg/L | *50.00* | | *115* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *42.3* | | ug/L | *50.00* | | *85* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 400 | 100 | ug/L | 400.0 | | 100 | 40-140 | 0.7 | 25 | |
| C9-C18 Aliphatics1 | 239 | 100 | ug/L | 300.0 | | 80 | 40-140 | 2 | 25 | |
| Decane (C10) | 33 | 5 | ug/L | 50.00 | | 66 | 40-140 | 2 | 25 | |
| Docosane (C22) | 45 | 5 | ug/L | 50.00 | | 91 | 40-140 | 0.4 | 25 | |
| Dodecane (C12) | 33 | 5 | ug/L | 50.00 | | 65 | 40-140 | 2 | 25 | |
| Eicosane (C20) | 45 | 5 | ug/L | 50.00 | | 91 | 40-140 | 0.7 | 25 | |
| Hexacosane (C26) | 46 | 5 | ug/L | 50.00 | | 92 | 40-140 | 0.3 | 25 | |
| Hexadecane (C16) | 44 | 5 | ug/L | 50.00 | | 87 | 40-140 | 2 | 25 | |
| Hexatriacontane (C36) | 47 | 5 | ug/L | 50.00 | | 94 | 40-140 | 0.3 | 25 | |
| Nonadecane (C19) | 45 | 5 | ug/L | 50.00 | | 91 | 40-140 | 1 | 25 | |
| Nonane (C9) | 26 | 5 | ug/L | 50.00 | | 53 | 30-140 | 1 | 25 | |
| Octacosane (C28) | 46 | 5 | ug/L | 50.00 | | 93 | 40-140 | 0.3 | 25 | |
| Octadecane (C18) | 43 | 5 | ug/L | 50.00 | | 86 | 40-140 | 1 | 25 | |
| Tetracosane (C24) | 46 | 5 | ug/L | 50.00 | | 92 | 40-140 | 0.3 | 25 | |
| Tetradecane (C14) | 41 | 5 | ug/L | 50.00 | | 82 | 40-140 | 3 | 25 | |
| Triacontane (C30) | 47 | 5 | ug/L | 50.00 | | 93 | 40-140 | 0.3 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CK71604 - 3510C** | | | | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *44.1* | | ug/L | *50.00* | | *88* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 34.8 | 5.0 | ug/L | 50.00 | | 70 | 40-140 | 2 | 20 | |
| Acenaphthene | 37.4 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | 0.9 | 20 | |
| Acenaphthylene | 35.6 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | 3 | 20 | |
| Anthracene | 38.4 | 5.0 | ug/L | 50.00 | | 77 | 40-140 | 0.1 | 20 | |
| Benzo(a)anthracene | 36.6 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | 2 | 20 | |
| Benzo(a)pyrene | 32.6 | 10.0 | ug/L | 50.00 | | 65 | 40-140 | 1 | 20 | |
| Benzo(b)fluoranthene | 37.2 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | 2 | 20 | |
| Benzo(g,h,i)perylene | 32.9 | 10.0 | ug/L | 50.00 | | 66 | 40-140 | 2 | 20 | |
| Benzo(k)fluoranthene | 36.5 | 10.0 | ug/L | 50.00 | | 73 | 40-140 | 2 | 20 | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 633 | 100 | ug/L | 850.0 | | 74 | 40-140 | 0.3 | 25 | |
| Chrysene | 36.0 | 10.0 | ug/L | 50.00 | | 72 | 40-140 | 0.7 | 20 | |
| Dibenzo(a,h)Anthracene | 32.2 | 5.0 | ug/L | 50.00 | | 64 | 40-140 | 0.9 | 20 | |
| Fluoranthene | 38.5 | 10.0 | ug/L | 50.00 | | 77 | 40-140 | 0.6 | 20 | |
| Fluorene | 37.4 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | 2 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 38.0 | 5.0 | ug/L | 50.00 | | 76 | 40-140 | 2 | 20 | |
| Naphthalene | 35.6 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | 0.6 | 20 | |
| Phenanthrene | 37.6 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | 0.2 | 20 | |
| Pyrene | 38.1 | 5.0 | ug/L | 50.00 | | 76 | 40-140 | 0.05 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *55.0* | | mg/L | *50.00* | | *110* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *55.0* | | mg/L | *50.00* | | *110* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *40.8* | | ug/L | *50.00* | | *82* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1711467

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 15.4 ºC. |
| Z16 | Aqueous pH measured in water at 14.9 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| D | Diluted. |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1711467

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711467
Date Received: 11/15/2017
Project Due Date: 11/22/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 182365 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 182366 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 182367 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 182368 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 182379 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 03 | 182369 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 03 | 182370 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 04 | 182371 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 05 | 182372 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 182373 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 182374 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 182375 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 06 | 182380 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 07 | 182376 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 07 | 182377 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 08 | 182378 | Yes | NA | Yes | 1L Poly - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 11/15/17 1939
Reviewed

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711467

Date Received: 11/15/2017

By:

Date & Time: 11/15/17 2040

Delivered By:

11/15/17 2040

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| Turn Time | 5-Day **Rush** |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ○MA MCP ○RGP |

| | |
|---|---|
| ESS Lab # | 1711467 |
| Reporting Limits | NRWQC(SW) |
| Electonic Deliverables | ☐Limit Checker ☑Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| SPS New England/ Charter Contracting Co, LLC | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Katherine Mason | 98 Elm St |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Salisbury | MA | 01952 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 617-608-7317 | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | Dissolved Metals (Arsenic, Lead, Mercury, Vanadium) | TSS/pH | EPH | PCBs | sVOCs (2-ethylhexyl phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/15/17 | 1100 | Grab | Aqueous | 171101-Wynn-CC-Influent-1 | | | | 2 | 2 |
| 02 | 11/15/17 | 1100 | Grab | Aqueous | 171101-Wynn-CC-Influent-2 | 1 | | | | |
| 03 | 11/15/17 | 1100 | Grab | Aqueous | 171101-Wynn-CC-Influent-3 | | | 2 | | |
| 04 | 11/15/17 | 1100 | Grab | Aqueous | 171101-Wynn-CC-Influent-4 | | 1 | | | |
| 05 | 11/15/17 | 1045 | Grab | Aqueous | 171101-Wynn-CC-Effluent-1 | | | | 2 | 2 |
| 06 | 11/15/17 | 1045 | Grab | Aqueous | 171101-Wynn-CC-Effluent-2 | 1 | | | | |
| 07 | 11/15/17 | 1045 | Grab | Aqueous | 171101-Wynn-CC-Effluent-3 | | | 2 | | |
| 08 | 11/15/17 | 1045 | Grab | Aqueous | 171101-Wynn-CC-Effluent-4 | | 1 | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| **Container Type:** | AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial | | | | | P | P | AG | AG | AG |
| **Container Volume:** | 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* | | | | | 3 | 6 | 6 | 6 | 6 |
| **Preservation Code:** | 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* | | | | | 1 | 1 | 2 | 1 | 1 |
| | | | | | **Number of Containers per Sample:** | 2 | 2 | 4 | 4 | 4 |

**Laboratory Use Only**

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 2.4

**Sampled by :** Meghan Clifford

**Comments:** **Please specify "Other" preservative and containers types in this space**

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 11/15/17 | [signature] 11/15/17 14:10 | [signature] 11/15/17 17:12 | [signature] 11/15/17 1530 |
| **Relinquished by: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** | **Relinquished By: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** |
| | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1712309**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 1:02 pm, Dec 21, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

## SAMPLE RECEIPT

The following samples were received on December 13, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712309-01 | 171101-Wynn-CC-Influent-1 | Aqueous | 8082A, 8270D |
| 1712309-02 | 171101-Wynn-CC-Influent-2 | Aqueous | 6010C, 6020A, 7010, 7470A |
| 1712309-03 | 171101-Wynn-CC-Influent-3 | Aqueous | EPH8270, MADEP-EPH |
| 1712309-04 | 171101-Wynn-CC-Influent-4 | Aqueous | 2540D, 9040 |
| 1712309-05 | 171101-Wynn-CC-Effluent-1 | Aqueous | 8082A, 8270D |
| 1712309-06 | 171101-Wynn-CC-Effluent-2 | Aqueous | 6010C, 6020A, 7010, 7470A |
| 1712309-07 | 171101-Wynn-CC-Efluent-3 | Aqueous | EPH8270, MADEP-EPH |
| 1712309-08 | 171101-Wynn-CC-Effluent-4 | Aqueous | 2540D, 9040 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

## PROJECT NARRATIVE

**8270D Semi-Volatile Organic Compounds**
C7L0289-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Phenol-d6 (21% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712309-01 through 1712309-08**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| ( ) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | (X) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | (X) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for '"Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (X)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard Date: December 21, 2017

Printed Name: Laurel Stoddard Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 12/13/17 11:50
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 12/14/17 8:54

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1254 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1260 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:09 | | CL71301 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *62 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *61 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *53 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-1
Date Sampled: 12/13/17 11:50
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 12/14/17 15:35

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.8) | | 8270D | | 1 | 12/19/17 19:34 | C7L0289 | CL71309 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *102 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *79 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *70 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *79 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *69 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *71 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-2
Date Sampled: 12/13/17 11:50
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (5.0) | | 7010 | | 1 | MJV/KJK | 12/19/17 18:20 | 10 | 10 | CL71829 |
| Lead | ND (1.0) | | 6020A | | 1 | NAR | 12/18/17 18:01 | 10 | 10 | CL71829 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 12/15/17 12:46 | 20 | 40 | CL71422 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 12/19/17 4:14 | 10 | 10 | CL71829 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-3
Date Sampled: 12/13/17 11:50
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-03
Sample Matrix: Aqueous
Units: ug/L

Prepared: 12/14/17 14:13

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (94) | | MADEP-EPH | | 1 | ZLC | 12/14/17 23:54 | C7L0211 | CL71401 |
| C19-C36 Aliphatics1 | ND (94) | | MADEP-EPH | | 1 | ZLC | 12/14/17 23:54 | C7L0211 | CL71401 |
| C11-C22 Unadjusted Aromatics1 | ND (94.3) | | EPH8270 | | 1 | ZLC | 12/15/17 0:51 | C7L0227 | CL71401 |
| C11-C22 Aromatics1,2 | ND (94.3) | | EPH8270 | | | ZLC | 12/15/17 0:51 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CL71401 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *62 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *92 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *82 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent-4
Date Sampled: 12/13/17 11:50
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-04
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.37** (N/A) | | 9040 | | 1 | BCA | 12/13/17 21:22 | S.U. | CL71356 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.6 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **40** (10) | | 2540D | | 1 | JLK | 12/14/17 20:29 | mg/L | CL71347 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 12/13/17 12:00
Percent Solids: N/A
Initial Volume: 1070
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 12/14/17 8:54

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1254 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1260 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 12/14/17 11:27 | | CL71301 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *78 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *81 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *69 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *61 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-1
Date Sampled: 12/13/17 12:00
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-05
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 12/14/17 15:35

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.8) | | 8270D | | 1 | 12/19/17 20:08 | C7L0289 | CL71309 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *96 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *76 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *82 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *67 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *75 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *65 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *91 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-2
Date Sampled: 12/13/17 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-06
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | ND (5.0) | | 7010 | | 1 | MJV/KJK | 12/19/17 18:26 | 10 | 10 | CL71829 |
| Lead | ND (1.0) | | 6020A | | 1 | NAR | 12/18/17 18:07 | 10 | 10 | CL71829 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 12/15/17 12:48 | 20 | 40 | CL71422 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 12/19/17 4:32 | 10 | 10 | CL71829 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Efluent-3
Date Sampled: 12/13/17 12:00
Percent Solids: N/A
Initial Volume: 980
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-07
Sample Matrix: Aqueous
Units: ug/L

Prepared: 12/14/17 14:13

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (102) | | MADEP-EPH | | 1 | ZLC | 12/15/17 0:41 | C7L0211 | CL71401 |
| C19-C36 Aliphatics1 | ND (102) | | MADEP-EPH | | 1 | ZLC | 12/15/17 0:41 | C7L0211 | CL71401 |
| C11-C22 Unadjusted Aromatics1 | ND (102) | | EPH8270 | | 1 | ZLC | 12/15/17 1:27 | C7L0227 | CL71401 |
| C11-C22 Aromatics1,2 | ND (102) | | EPH8270 | | | ZLC | 12/15/17 1:27 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CL71401 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *72 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *89 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *83 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *87 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent-4
Date Sampled: 12/13/17 12:00
Percent Solids: N/A

ESS Laboratory Work Order: 1712309
ESS Laboratory Sample ID: 1712309-08
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.74** (N/A) | | 9040 | | 1 | BCA | 12/13/17 21:22 | S.U. | CL71356 |
| **pH Sample Temp** | **Aqueous pH measured in water at 16 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **30** (5) | | 2540D | | 1 | JLK | 12/14/17 20:29 | mg/L | CL71347 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | | |
| **Batch CL71422 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 5.69 | 0.20 | ug/L | 6.000 | | 95 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 5.70 | 0.20 | ug/L | 6.000 | | 95 | 80-120 | 0.2 | 20 | |
| **Batch CL71829 - 200.7/6010BNoDigest** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 5.0 | ug/L | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 5.0 | ug/L | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Vanadium | 0.5 | | mg/L | 0.5000 | | 100 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Lead | 21.4 | | ug/L | 20.28 | | 105 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 25.2 | | ug/L | 25.00 | | 101 | 80-120 | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71301 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1712309

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71301 - 3510C** | | | | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0442* | | ug/L | *0.05000* | | *88* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0474* | | ug/L | *0.05000* | | *95* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0356* | | ug/L | *0.05000* | | *71* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0430* | | ug/L | *0.05000* | | *86* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.76 | 0.10 | ug/L | 1.000 | | 76 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.95 | 0.10 | ug/L | 1.000 | | 95 | 40-140 | | | |
| Aroclor 1260 | 0.80 | 0.10 | ug/L | 1.000 | | 80 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.93 | 0.10 | ug/L | 1.000 | | 93 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0468* | | ug/L | *0.05000* | | *94* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0503* | | ug/L | *0.05000* | | *101* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0371* | | ug/L | *0.05000* | | *74* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0422* | | ug/L | *0.05000* | | *84* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.84 | 0.10 | ug/L | 1.000 | | 84 | 40-140 | 9 | 20 | |
| Aroclor 1016 [2C] | 1.05 | 0.10 | ug/L | 1.000 | | 105 | 40-140 | 10 | 20 | |
| Aroclor 1260 | 0.92 | 0.10 | ug/L | 1.000 | | 92 | 40-140 | 14 | 20 | |
| Aroclor 1260 [2C] | 0.90 | 0.10 | ug/L | 1.000 | | 90 | 40-140 | 4 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0491* | | ug/L | *0.05000* | | *98* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0501* | | ug/L | *0.05000* | | *100* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0360* | | ug/L | *0.05000* | | *72* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0388* | | ug/L | *0.05000* | | *78* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71309 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *77.9* | | ug/L | *100.0* | | *78* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *134* | | ug/L | *150.0* | | *89* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *112* | | ug/L | *150.0* | | *74* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *86.1* | | ug/L | *100.0* | | *86* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *89.8* | | ug/L | *150.0* | | *60* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *83.3* | | ug/L | *100.0* | | *83* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *101* | | ug/L | *150.0* | | *68* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *98.8* | | ug/L | *100.0* | | *99* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 99.9 | 6.0 | ug/L | 100.0 | | 100 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *67.3* | | ug/L | *100.0* | | *67* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *152* | | ug/L | *150.0* | | *101* | *15-110* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71309 - 3520C** | | | | | | | | | | |
| *Surrogate: 2-Chlorophenol-d4* | *102* | | ug/L | *150.0* | | *68* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *79.8* | | ug/L | *100.0* | | *80* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *80.6* | | ug/L | *150.0* | | *54* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *75.8* | | ug/L | *100.0* | | *76* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *93.3* | | ug/L | *150.0* | | *62* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *88.6* | | ug/L | *100.0* | | *89* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 104 | 6.0 | ug/L | 100.0 | | 104 | 40-140 | 4 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *69.7* | | ug/L | *100.0* | | *70* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *157* | | ug/L | *150.0* | | *105* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *103* | | ug/L | *150.0* | | *69* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *86.4* | | ug/L | *100.0* | | *86* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *78.8* | | ug/L | *150.0* | | *53* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *80.6* | | ug/L | *100.0* | | *81* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *94.8* | | ug/L | *150.0* | | *63* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *94.8* | | ug/L | *100.0* | | *95* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL71347 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 32 | | mg/L | 34.10 | | 94 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CL71401 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CL71401 - 3510C** | | | | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *40.0* | | ug/L | *50.00* | | *80* | *40-140* | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *42.2* | | ug/L | *50.00* | | *84* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *40.3* | | ug/L | *50.00* | | *81* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *42.8* | | ug/L | *50.00* | | *86* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 361 | 100 | ug/L | 400.0 | | 90 | 40-140 | | | |
| C9-C18 Aliphatics1 | 206 | 100 | ug/L | 300.0 | | 69 | 40-140 | | | |
| Decane (C10) | 27 | 5 | ug/L | 50.00 | | 55 | 40-140 | | | |
| Docosane (C22) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Dodecane (C12) | 27 | 5 | ug/L | 50.00 | | 55 | 40-140 | | | |
| Eicosane (C20) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Hexacosane (C26) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Hexadecane (C16) | 39 | 5 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Hexatriacontane (C36) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Nonadecane (C19) | 42 | 5 | ug/L | 50.00 | | 85 | 40-140 | | | |
| Nonane (C9) | 22 | 5 | ug/L | 50.00 | | 45 | 30-140 | | | |
| Octacosane (C28) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Octadecane (C18) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Tetracosane (C24) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Tetradecane (C14) | 36 | 5 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Triacontane (C30) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *38.8* | | ug/L | *50.00* | | *78* | *40-140* | | | |
| **LCS** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CL71401 - 3510C** | | | | | | | | | | |
| 2-Methylnaphthalene | 29.3 | 5.0 | ug/L | 50.00 | | 59 | 40-140 | | | |
| Acenaphthene | 32.4 | 5.0 | ug/L | 50.00 | | 65 | 40-140 | | | |
| Acenaphthylene | 33.8 | 5.0 | ug/L | 50.00 | | 68 | 40-140 | | | |
| Anthracene | 38.2 | 5.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Benzo(a)anthracene | 40.2 | 5.0 | ug/L | 50.00 | | 80 | 40-140 | | | |
| Benzo(a)pyrene | 40.0 | 10.0 | ug/L | 50.00 | | 80 | 40-140 | | | |
| Benzo(b)fluoranthene | 41.3 | 5.0 | ug/L | 50.00 | | 83 | 40-140 | | | |
| Benzo(g,h,i)perylene | 39.3 | 10.0 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Benzo(k)fluoranthene | 40.6 | 10.0 | ug/L | 50.00 | | 81 | 40-140 | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 684 | 100 | ug/L | 850.0 | | 80 | 40-140 | | | |
| Chrysene | 38.9 | 10.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 39.7 | 5.0 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Fluoranthene | 39.2 | 10.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Fluorene | 34.5 | 5.0 | ug/L | 50.00 | | 69 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 41.6 | 5.0 | ug/L | 50.00 | | 83 | 40-140 | | | |
| Naphthalene | 32.5 | 10.0 | ug/L | 50.00 | | 65 | 40-140 | | | |
| Phenanthrene | 37.1 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Pyrene | 37.7 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *44.0* | | ug/L | *50.00* | | *88* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *42.4* | | ug/L | *50.00* | | *85* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *38.1* | | ug/L | *50.00* | | *76* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 327 | 100 | ug/L | 400.0 | | 82 | 40-140 | 10 | 25 | |
| C9-C18 Aliphatics1 | 192 | 100 | ug/L | 300.0 | | 64 | 40-140 | 7 | 25 | |
| Decane (C10) | 26 | 5 | ug/L | 50.00 | | 51 | 40-140 | 7 | 25 | |
| Docosane (C22) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | 6 | 25 | |
| Dodecane (C12) | 26 | 5 | ug/L | 50.00 | | 52 | 40-140 | 5 | 25 | |
| Eicosane (C20) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 6 | 25 | |
| Hexacosane (C26) | 39 | 5 | ug/L | 50.00 | | 79 | 40-140 | 6 | 25 | |
| Hexadecane (C16) | 37 | 5 | ug/L | 50.00 | | 73 | 40-140 | 6 | 25 | |
| Hexatriacontane (C36) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | 5 | 25 | |
| Nonadecane (C19) | 40 | 5 | ug/L | 50.00 | | 80 | 40-140 | 5 | 25 | |
| Nonane (C9) | 21 | 5 | ug/L | 50.00 | | 41 | 30-140 | 8 | 25 | |
| Octacosane (C28) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 6 | 25 | |
| Octadecane (C18) | 38 | 5 | ug/L | 50.00 | | 75 | 40-140 | 6 | 25 | |
| Tetracosane (C24) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 6 | 25 | |
| Tetradecane (C14) | 34 | 5 | ug/L | 50.00 | | 68 | 40-140 | 4 | 25 | |
| Triacontane (C30) | 40 | 5 | ug/L | 50.00 | | 79 | 40-140 | 6 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *35.5* | | ug/L | *50.00* | | *71* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CL71401 - 3510C** | | | | | | | | | | |
| 2-Methylnaphthalene | 26.3 | 5.0 | ug/L | 50.00 | | 53 | 40-140 | 11 | 20 | |
| Acenaphthene | 29.6 | 5.0 | ug/L | 50.00 | | 59 | 40-140 | 9 | 20 | |
| Acenaphthylene | 29.8 | 5.0 | ug/L | 50.00 | | 60 | 40-140 | 12 | 20 | |
| Anthracene | 33.3 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | 14 | 20 | |
| Benzo(a)anthracene | 35.6 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | 12 | 20 | |
| Benzo(a)pyrene | 34.9 | 10.0 | ug/L | 50.00 | | 70 | 40-140 | 14 | 20 | |
| Benzo(b)fluoranthene | 35.7 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | 15 | 20 | |
| Benzo(g,h,i)perylene | 34.3 | 10.0 | ug/L | 50.00 | | 69 | 40-140 | 14 | 20 | |
| Benzo(k)fluoranthene | 35.6 | 10.0 | ug/L | 50.00 | | 71 | 40-140 | 13 | 20 | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 623 | 100 | ug/L | 850.0 | | 73 | 40-140 | 9 | 25 | |
| Chrysene | 34.9 | 10.0 | ug/L | 50.00 | | 70 | 40-140 | 11 | 20 | |
| Dibenzo(a,h)Anthracene | 35.2 | 5.0 | ug/L | 50.00 | | 70 | 40-140 | 12 | 20 | |
| Fluoranthene | 34.9 | 10.0 | ug/L | 50.00 | | 70 | 40-140 | 12 | 20 | |
| Fluorene | 31.1 | 5.0 | ug/L | 50.00 | | 62 | 40-140 | 10 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 36.7 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | 12 | 20 | |
| Naphthalene | 29.1 | 10.0 | ug/L | 50.00 | | 58 | 40-140 | 11 | 20 | |
| Phenanthrene | 33.0 | 5.0 | ug/L | 50.00 | | 66 | 40-140 | 12 | 20 | |
| Pyrene | 34.1 | 5.0 | ug/L | 50.00 | | 68 | 40-140 | 10 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *42.3* | | ug/L | *50.00* | | *85* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *40.5* | | ug/L | *50.00* | | *81* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *36.0* | | ug/L | *50.00* | | *72* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1712309

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 16 ºC. |
| Z16 | Aqueous pH measured in water at 15.6 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1712309

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712309
Date Received: 12/13/2017
Project Due Date: 12/20/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.4 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 190457 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 190458 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 190459 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 190460 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 190469 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 03 | 190465 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 03 | 190466 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 04 | 190471 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 05 | 190461 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 190462 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 190463 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 05 | 190464 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 06 | 190470 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 07 | 190467 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 07 | 190468 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 08 | 190472 | Yes | NA | Yes | 1L Poly - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 12/13/17 1922
Reviewed

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712309

Date Received: 12/13/2017

By: [signature]

Date & Time: 12/13/17 1926

Delivered By: [signature]

12/13/17 1927

ESS Laboratory
*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1712309

Turn Time (5-Day) Rush

Regulatory State

Reporting Limits NRWQC(SW)

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| SPS New England/ Charter Contracting Co, LLC | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Katherine Mason | 98 Elm St |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Salisbury | MA | 01952 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 617-608-7317 | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | Dissolved Metals (Arsenic, Lead, Mercury, Vanadium) | TSS/pH | EPH | PCBs | sVOCs (2-ethylhexyl phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 12/13/17 | 11:50 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-1 | | | | 2 | 2 |
| 02 | 12/13/17 | 11:50 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-2 | 1 | | | | |
| 03 | 12/13/17 | 11:50 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-3 | | | 2 | | |
| 04 | 12/13/17 | 11:50 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-4 | | 1 | | | |
| 05 | 12/13/17 | 12:00 PM | Grab | Aqueous | 171101-Wynn-CC-Effluent-1 | | | | 2 | 2 |
| 06 | 12/13/17 | 12:00 PM | Grab | Aqueous | 171101-Wynn-CC-Effluent-2 | 1 | | | | |
| 07 | 12/13/17 | 12:00 PM | Grab | Aqueous | 171101-Wynn-CC-Effluent-3 | | | 2 | | |
| 08 | 12/13/17 | 1200 PM | Grab | Aqueous | 171101-Wynn-CC-Effluent-4 | | 1 | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Container Type:** | AC-Air Cassette | AG-Amber Glass | B-BOD Bottle | C-Cubitainer | G - Glass | O-Other | P-Poly | S-Sterile | V-Vial | P | P | AG | AG | AG | | | | | | | | | | | | | | | | | | | |
| **Container Volume:** | 1-100 mL | 2-2.5 gal | 3-250 mL | 4-300 mL | 5-500 mL | 6-1L | 7-VOA | 8-2 oz | 9-4 oz | 10-8 oz | 11-Other* | 3 | 6 | 6 | 6 | 6 | | | | | | | | | | | | | | | | | |
| **Preservation Code:** | 1-Non Preserved | 2-HCl | 3-H2SO4 | 4-HNO3 | 5-NaOH | 6-Methanol | 7-Na2S2O3 | 8-ZnAce, NaOH | 9-NH4Cl | 10-DI H2O | 11-Other* | 1 | 1 | 2 | 1 | 1 | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | **Number of Containers per Sample:** | 2 | 2 | 4 | 4 | 4 | | | | | | | | | | | | | | | | | |

**Laboratory Use Only**

Cooler Present: ✓

Seals Intact: —

Cooler Temperature: Ectemp 3.1 °C 12-13-17 17:54

**Sampled by :** Monica DeCicco

**Comments:** **Please specify "Other" preservative and containers types in this space**

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/13, 13:15 | [signature] 12-13-17 13:55 | [signature] 12-13-17 17:54 | [signature] 12/13/17 KD |
| **Relinquished by: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** | **Relinquished By: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** |
| | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1801282**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 5:18 pm, Jan 24, 2018**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

## SAMPLE RECEIPT

The following samples were received on January 17, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, SVOA, and EPH were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1801282-01 | 171101-Wynn-CC-Influent | Aqueous | 2540D, 6010C, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH |
| 1801282-02 | 171101-Wynn-CC-Effluent | Aqueous | 2540D, 6010C, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1801282

## PROJECT NARRATIVE

**Dissolved Metals**

1801282-01 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic , Lead

1801282-02 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic , Lead

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1801282-01 through 1801282-02**

Matrices: ( ) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air (X) Other: Aqueous

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| ( ) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | ( ) 6020 Metals CAM III D | (X) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes (X) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for '"Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes ( ) No (X)* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes (X) No ( )* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (X)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard Date: January 24, 2018

Printed Name: Laurel Stoddard Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | **EL** ND (50.0) | | 6010C | | 1 | KJK | 01/19/18 16:27 | 10 | 10 | CA81925 |
| Lead | **EL** ND (20.0) | | 6010C | | 1 | KJK | 01/19/18 16:27 | 10 | 10 | CA81925 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 01/19/18 11:22 | 20 | 40 | CA81832 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 01/19/18 16:27 | 10 | 10 | CA81925 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A
Initial Volume: 1060
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 1/18/18 9:58

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1221 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1232 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1242 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1248 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1254 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1260 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1262 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |
| Aroclor 1268 | ND (0.09) | | 8082A | | 1 | 01/18/18 12:04 | | CA81805 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *66 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A
Initial Volume: 990
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 1/19/18 18:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (6.1) | | 8270D | | 1 | 01/23/18 18:03 | C8A0284 | CA81903 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *88 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *79 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *70 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *85 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *81 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *104 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.44** (N/A) | | 9040 | | 1 | CCP | 01/17/18 19:09 | S.U. | CA81730 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.6 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **30** (5) | | 2540D | | 1 | EEM | 01/18/18 14:00 | mg/L | CA81812 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 01/17/18 09:40
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-01
Sample Matrix: Aqueous
Units: ug/L

Prepared: 1/18/18 15:00

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (99) | | MADEP-EPH | | 1 | ZLC | 01/19/18 16:33 | C8A0211 | CA81806 |
| C19-C36 Aliphatics1 | ND (99) | | MADEP-EPH | | 1 | ZLC | 01/19/18 16:33 | C8A0211 | CA81806 |
| C11-C22 Unadjusted Aromatics1 | ND (99.0) | | EPH8270 | | 1 | ZLC | 01/19/18 17:44 | C8A0229 | CA81806 |
| C11-C22 Aromatics1,2 | ND (99.0) | | EPH8270 | | | ZLC | 01/19/18 17:44 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CA81806 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *78 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *100 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *91 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *84 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | **EL** ND (50.0) | | 6010C | | 1 | KJK | 01/19/18 16:32 | 10 | 10 | CA81925 |
| Lead | **EL** ND (40.0) | | 6010C | | 2 | KJK | 01/19/18 17:24 | 10 | 10 | CA81925 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 01/19/18 11:25 | 20 | 40 | CA81832 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 01/19/18 16:32 | 10 | 10 | CA81925 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 1/18/18 9:58

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1221 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1232 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1242 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1248 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1254 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1260 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1262 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |
| Aroclor 1268 | ND (0.10) | | 8082A | | 1 | 01/18/18 12:23 | | CA81805 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *78 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 1/19/18 18:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.9) | | 8270D | | 1 | 01/23/18 18:38 | C8A0284 | CA81903 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *86 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *93 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *90 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *96 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *84 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *95 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *91 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *109 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.80** (N/A) | | 9040 | | 1 | CCP | 01/17/18 19:09 | S.U. | CA81730 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.9 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **27** (5) | | 2540D | | 1 | EEM | 01/18/18 14:00 | mg/L | CA81812 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 01/17/18 09:18
Percent Solids: N/A
Initial Volume: 1040
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1801282
ESS Laboratory Sample ID: 1801282-02
Sample Matrix: Aqueous
Units: ug/L

Prepared: 1/18/18 15:00

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (96) | | MADEP-EPH | | 1 | ZLC | 01/19/18 17:20 | C8A0211 | CA81806 |
| C19-C36 Aliphatics1 | ND (96) | | MADEP-EPH | | 1 | ZLC | 01/19/18 17:20 | C8A0211 | CA81806 |
| C11-C22 Unadjusted Aromatics1 | ND (96.2) | | EPH8270 | | 1 | ZLC | 01/19/18 18:21 | C8A0229 | CA81806 |
| C11-C22 Aromatics1,2 | ND (96.2) | | EPH8270 | | | ZLC | 01/19/18 18:21 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CA81806 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *79 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *98 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *83 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | | |
| **Batch CA81832 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 5.73 | 0.20 | ug/L | 6.000 | | 96 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 5.82 | 0.20 | ug/L | 6.000 | | 97 | 80-120 | 2 | 20 | |
| **Batch CA81925 - 200.7/6010BNoDigest** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 50.0 | ug/L | | | | | | | |
| Lead | ND | 20.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 50.0 | ug/L | | | | | | | |
| Lead | ND | 20.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 0.5 | | mg/L | 0.5000 | | 97 | 80-120 | | | |
| Lead | 0.5 | | mg/L | 0.5000 | | 98 | 80-120 | | | |
| Vanadium | 0.5 | | mg/L | 0.5000 | | 97 | 80-120 | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CA81805 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0417* | | ug/L | *0.05000* | | *83* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CA81805 - 3510C** | | | | | | | | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0452* | | ug/L | *0.05000* | | *90* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0276* | | ug/L | *0.05000* | | *55* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0324* | | ug/L | *0.05000* | | *65* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 1.03 | 0.10 | ug/L | 1.000 | | 103 | 40-140 | | | |
| Aroclor 1016 [2C] | 1.05 | 0.10 | ug/L | 1.000 | | 105 | 40-140 | | | |
| Aroclor 1260 | 1.10 | 0.10 | ug/L | 1.000 | | 110 | 40-140 | | | |
| Aroclor 1260 [2C] | 1.01 | 0.10 | ug/L | 1.000 | | 101 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0443* | | ug/L | *0.05000* | | *89* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0484* | | ug/L | *0.05000* | | *97* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0374* | | ug/L | *0.05000* | | *75* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0368* | | ug/L | *0.05000* | | *74* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 1.02 | 0.10 | ug/L | 1.000 | | 102 | 40-140 | 1 | 20 | |
| Aroclor 1016 [2C] | 1.05 | 0.10 | ug/L | 1.000 | | 105 | 40-140 | 0.008 | 20 | |
| Aroclor 1260 | 1.08 | 0.10 | ug/L | 1.000 | | 108 | 40-140 | 2 | 20 | |
| Aroclor 1260 [2C] | 1.05 | 0.10 | ug/L | 1.000 | | 105 | 40-140 | 3 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0420* | | ug/L | *0.05000* | | *84* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0442* | | ug/L | *0.05000* | | *88* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0346* | | ug/L | *0.05000* | | *69* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0344* | | ug/L | *0.05000* | | *69* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CA81903 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *46.8* | | ug/L | *100.0* | | *47* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *73.2* | | ug/L | *150.0* | | *49* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *63.4* | | ug/L | *150.0* | | *42* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *48.8* | | ug/L | *100.0* | | *49* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *48.9* | | ug/L | *150.0* | | *33* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *51.4* | | ug/L | *100.0* | | *51* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *66.3* | | ug/L | *150.0* | | *44* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *62.3* | | ug/L | *100.0* | | *62* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 90.8 | 6.0 | ug/L | 100.0 | | 91 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *90.2* | | ug/L | *100.0* | | *90* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *152* | | ug/L | *150.0* | | *102* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *110* | | ug/L | *150.0* | | *74* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *98.1* | | ug/L | *100.0* | | *98* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *79.0* | | ug/L | *150.0* | | *53* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *102* | | ug/L | *100.0* | | *102* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CA81903 - 3520C** | | | | | | | | | | |
| *Surrogate: Phenol-d6* | *117* | | ug/L | *150.0* | | *78* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *115* | | ug/L | *100.0* | | *115* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 89.5 | 6.0 | ug/L | 100.0 | | 89 | 40-140 | 1 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *89.3* | | ug/L | *100.0* | | *89* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *151* | | ug/L | *150.0* | | *100* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *121* | | ug/L | *150.0* | | *81* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *97.6* | | ug/L | *100.0* | | *98* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *87.0* | | ug/L | *150.0* | | *58* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *100* | | ug/L | *100.0* | | *100* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *127* | | ug/L | *150.0* | | *84* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *112* | | ug/L | *100.0* | | *112* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CA81812 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 34 | | mg/L | 34.10 | | 100 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CA81806 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *42.9* | | ug/L | *50.00* | | *86* | *40-140* | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CA81806 - 3510C** | | | | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *46.1* | | ug/L | *50.00* | | *92* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *42.1* | | ug/L | *50.00* | | *84* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *43.3* | | ug/L | *50.00* | | *87* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 346 | 100 | ug/L | 400.0 | | 87 | 40-140 | | | |
| C9-C18 Aliphatics1 | 194 | 100 | ug/L | 300.0 | | 65 | 40-140 | | | |
| Decane (C10) | 26 | 5 | ug/L | 50.00 | | 53 | 40-140 | | | |
| Docosane (C22) | 42 | 5 | ug/L | 50.00 | | 83 | 40-140 | | | |
| Dodecane (C12) | 31 | 5 | ug/L | 50.00 | | 61 | 40-140 | | | |
| Eicosane (C20) | 41 | 5 | ug/L | 50.00 | | 82 | 40-140 | | | |
| Hexacosane (C26) | 42 | 5 | ug/L | 50.00 | | 85 | 40-140 | | | |
| Hexadecane (C16) | 38 | 5 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Hexatriacontane (C36) | 43 | 5 | ug/L | 50.00 | | 87 | 40-140 | | | |
| Nonadecane (C19) | 41 | 5 | ug/L | 50.00 | | 82 | 40-140 | | | |
| Nonane (C9) | 21 | 5 | ug/L | 50.00 | | 43 | 30-140 | | | |
| Octacosane (C28) | 43 | 5 | ug/L | 50.00 | | 86 | 40-140 | | | |
| Octadecane (C18) | 39 | 5 | ug/L | 50.00 | | 77 | 40-140 | | | |
| Tetracosane (C24) | 42 | 5 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Tetradecane (C14) | 35 | 5 | ug/L | 50.00 | | 70 | 40-140 | | | |
| Triacontane (C30) | 44 | 5 | ug/L | 50.00 | | 89 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *40.8* | | ug/L | *50.00* | | *82* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 26.6 | 5.0 | ug/L | 50.00 | | 53 | 40-140 | | | |
| Acenaphthene | 31.0 | 5.0 | ug/L | 50.00 | | 62 | 40-140 | | | |
| Acenaphthylene | 31.0 | 5.0 | ug/L | 50.00 | | 62 | 40-140 | | | |
| Anthracene | 36.8 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CA81806 - 3510C** | | | | | | | | | | |
| Benzo(a)anthracene | 39.1 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | | | |
| Benzo(a)pyrene | 37.8 | 10.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| Benzo(b)fluoranthene | 39.4 | 5.0 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Benzo(g,h,i)perylene | 35.1 | 10.0 | ug/L | 50.00 | | 70 | 40-140 | | | |
| Benzo(k)fluoranthene | 37.9 | 10.0 | ug/L | 50.00 | | 76 | 40-140 | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 556 | 100 | ug/L | 850.0 | | 65 | 40-140 | | | |
| Chrysene | 37.1 | 10.0 | ug/L | 50.00 | | 74 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 35.6 | 5.0 | ug/L | 50.00 | | 71 | 40-140 | | | |
| Fluoranthene | 36.0 | 10.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Fluorene | 33.7 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 38.4 | 5.0 | ug/L | 50.00 | | 77 | 40-140 | | | |
| Naphthalene | 28.3 | 10.0 | ug/L | 50.00 | | 57 | 40-140 | | | |
| Phenanthrene | 34.6 | 5.0 | ug/L | 50.00 | | 69 | 40-140 | | | |
| Pyrene | 35.9 | 5.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *48.2* | | ug/L | *50.00* | | *96* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *44.6* | | ug/L | *50.00* | | *89* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *45.3* | | ug/L | *50.00* | | *91* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 362 | 100 | ug/L | 400.0 | | 90 | 40-140 | 4 | 25 | |
| C9-C18 Aliphatics1 | 214 | 100 | ug/L | 300.0 | | 71 | 40-140 | 10 | 25 | |
| Decane (C10) | 28 | 5 | ug/L | 50.00 | | 57 | 40-140 | 8 | 25 | |
| Docosane (C22) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | 7 | 25 | |
| Dodecane (C12) | 33 | 5 | ug/L | 50.00 | | 66 | 40-140 | 8 | 25 | |
| Eicosane (C20) | 44 | 5 | ug/L | 50.00 | | 89 | 40-140 | 8 | 25 | |
| Hexacosane (C26) | 46 | 5 | ug/L | 50.00 | | 91 | 40-140 | 7 | 25 | |
| Hexadecane (C16) | 43 | 5 | ug/L | 50.00 | | 85 | 40-140 | 11 | 25 | |
| Hexatriacontane (C36) | 47 | 5 | ug/L | 50.00 | | 93 | 40-140 | 7 | 25 | |
| Nonadecane (C19) | 45 | 5 | ug/L | 50.00 | | 90 | 40-140 | 8 | 25 | |
| Nonane (C9) | 23 | 5 | ug/L | 50.00 | | 46 | 30-140 | 8 | 25 | |
| Octacosane (C28) | 46 | 5 | ug/L | 50.00 | | 93 | 40-140 | 7 | 25 | |
| Octadecane (C18) | 43 | 5 | ug/L | 50.00 | | 85 | 40-140 | 9 | 25 | |
| Tetracosane (C24) | 45 | 5 | ug/L | 50.00 | | 91 | 40-140 | 7 | 25 | |
| Tetradecane (C14) | 39 | 5 | ug/L | 50.00 | | 78 | 40-140 | 11 | 25 | |
| Triacontane (C30) | 48 | 5 | ug/L | 50.00 | | 96 | 40-140 | 8 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *42.6* | | ug/L | *50.00* | | *85* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 29.6 | 5.0 | ug/L | 50.00 | | 59 | 40-140 | 10 | 20 | |
| Acenaphthene | 33.6 | 5.0 | ug/L | 50.00 | | 67 | 40-140 | 8 | 20 | |
| Acenaphthylene | 34.7 | 5.0 | ug/L | 50.00 | | 69 | 40-140 | 11 | 20 | |
| Anthracene | 38.8 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | 6 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CA81806 - 3510C** | | | | | | | | | | |
| Benzo(a)anthracene | 39.4 | 5.0 | ug/L | 50.00 | | 79 | 40-140 | 0.9 | 20 | |
| Benzo(a)pyrene | 40.2 | 10.0 | ug/L | 50.00 | | 80 | 40-140 | 6 | 20 | |
| Benzo(b)fluoranthene | 41.6 | 5.0 | ug/L | 50.00 | | 83 | 40-140 | 6 | 20 | |
| Benzo(g,h,i)perylene | 38.4 | 10.0 | ug/L | 50.00 | | 77 | 40-140 | 9 | 20 | |
| Benzo(k)fluoranthene | 39.4 | 10.0 | ug/L | 50.00 | | 79 | 40-140 | 4 | 20 | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 605 | 100 | ug/L | 850.0 | | 71 | 40-140 | 8 | 25 | |
| Chrysene | 38.6 | 10.0 | ug/L | 50.00 | | 77 | 40-140 | 4 | 20 | |
| Dibenzo(a,h)Anthracene | 39.6 | 5.0 | ug/L | 50.00 | | 79 | 40-140 | 11 | 20 | |
| Fluoranthene | 37.4 | 10.0 | ug/L | 50.00 | | 75 | 40-140 | 4 | 20 | |
| Fluorene | 36.3 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | 8 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 42.0 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | 9 | 20 | |
| Naphthalene | 32.1 | 10.0 | ug/L | 50.00 | | 64 | 40-140 | 12 | 20 | |
| Phenanthrene | 36.9 | 5.0 | ug/L | 50.00 | | 74 | 40-140 | 6 | 20 | |
| Pyrene | 37.5 | 5.0 | ug/L | 50.00 | | 75 | 40-140 | 4 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *49.7* | | ug/L | *50.00* | | *99* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *44.1* | | ug/L | *50.00* | | *88* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *45.9* | | ug/L | *50.00* | | *92* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1801282

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 15.9 ºC. |
| Z16 | Aqueous pH measured in water at 15.6 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| EL | Elevated Method Reporting Limits due to sample matrix (EL). |
| D | Diluted. |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1801282

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1801282
Date Received: 1/17/2018
Project Due Date: 1/24/2018
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.9 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 196132 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 01 | 196134 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 01 | 196139 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 196140 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 196141 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 196142 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 196145 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 01 | 196146 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 02 | 196131 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 02 | 196133 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 02 | 196135 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 196136 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 196137 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 196138 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 196143 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 02 | 196144 | Yes | NA | Yes | 1L Amber - HCl | HCl | |

2nd Review
Are barcode labels on correct containers? (Yes) / No

Completed By: [signature] Date & Time: 1/17/18 1644
Reviewed

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1801282

Date Received: 1/17/2018

By: [signature] Date & Time: 1/17/18 1728

Delivered By: [signature] 1/17/18 1728

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1801282 |
| Turn Time | (5-Day) Rush |
| Regulatory State | |
| Reporting Limits | NRWQC(SW) |
| Is this project for any of the following?: | ○ CT RCP ○ MA MCP ○ RGP |
| Electonic Deliverables | ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| SPS New England/ Charter Contracting Co, LLC | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Katherine Mason | 98 Elm St |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Salisbury | MA | 01952 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 617-608-7317 | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | Dissolved Metals (Arsenic, Lead, Mercury, Vanadium) | TSS/pH | EPH | PCBs | sVOCs (2-ethylhexyl phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 01 | 1/17/18 | 9:40 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-1 | | | | 2 | 2 |
| 1 02 | 1/17/18 | 9:40 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-2 | 1 | | | | |
| 1 03 | 1/17/18 | 9:40 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-3 | | | 2 | | |
| 1 04 | 1/17/18 | 9:40 AM | Grab | Aqueous | 171101-Wynn-CC-Influent-4 | | 1 | | | |
| 2 05 | 1/17/18 | 9:18 AM | Grab | Aqueous | 171101-Wynn-CC-Effluent-1 | | | | 2 | 2 |
| 2 06 | 1/17/18 | 9:18 AM | Grab | Aqueous | 171101-Wynn-CC-Effluent-2 | 1 | | | | |
| 2 07 | 1/17/18 | 9:18 AM | Grab | Aqueous | 171101-Wynn-CC-Effluent-3 | | | 2 | | |
| 2 08 | 1/17/18 | 9:18 AM | Grab | Aqueous | 171101-Wynn-CC-Effluent-4 | | 1 | | | |
| RE 1/17/18 | | | | | | | | | | |
| | | | | | | | | | | |
| **Container Type:** | AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial | | | | | P | P | AG | AG | AG |
| **Container Volume:** | 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* | | | | | 3 | 6 | 6 | 6 | 6 |
| **Preservation Code:** | 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* | | | | | 1 | 1 | 2 | 1 | 1 |
| | | | | | **Number of Containers per Sample:** | 2 | 2 | 4 | 4 | 4 |

**Laboratory Use Only**

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C Ice temp: 2.9

**Sampled by :** Monica DeCicco

**Comments:** Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 01/17/18 13:25 | 1/17/18 13:25 | 1/17/18 15:59 | 1/17/18 1635 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Dredging (454)**
**ESS Laboratory Work Order Number: 1802262**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 12:31 pm, Feb 21, 2018**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

## SAMPLE RECEIPT

The following samples were received on February 14, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Question I: All samples for Metals, SVOA and EPH were analyzed for a subset of the required MCP list per the client's request.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1802262-01 | 171101-Wynn-CC-Influent | Aqueous | 2540D, 6010C, 6020A, 7010, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH |
| 1802262-02 | 171101-Wynn-CC-Effluent | Aqueous | 2540D, 6010C, 6020A, 7010, 7470A, 8082A, 8270D, 9040, EPH8270, MADEP-EPH |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

## PROJECT NARRATIVE

**Dissolved Metals**

1802262-01 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic

1802262-02 **Elevated Method Reporting Limits due to sample matrix (EL).**
Arsenic

**MADEP-EPH Extractable Petroleum Hydrocarbons**

C8B0209-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzo(g,h,i)perylene (33% @ 20%), Dibenzo(a,h)Anthracene (20% @ 20%), Indeno(1,2,3-cd)Pyrene (22% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1802262-01 through 1802262-02**

Matrices: (X) Ground Water/Surface Water ( ) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| ( ) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | (X) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | ( ) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| ( ) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | (X) MassDEP EPH CAM IV B | ( ) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes (X) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for '"Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes ( ) No (X)* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes ( ) No (X)* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard Date: February 21, 2018

Printed Name: Laurel Stoddard Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | **EL** ND (25.0) | | 7010 | | 5 | MJV | 02/19/18 13:58 | 10 | 10 | CB81513 |
| Lead | ND (1.0) | | 6020A | | 1 | NAR | 02/16/18 15:55 | 10 | 10 | CB81513 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 02/16/18 12:31 | 20 | 40 | CB81528 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 02/15/18 11:53 | 10 | 10 | CB81513 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 2/15/18 9:30

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1221 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1232 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1242 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1248 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1254 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1260 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1262 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |
| Aroclor 1268 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:07 | | CB81407 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *78 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *75 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *77 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 2/14/18 17:35

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.9) | | 8270D | | 1 | 02/16/18 17:13 | C8B0237 | CB81322 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *89 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *81 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *76 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *85 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *83 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *95 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.99** (N/A) | | 9040 | | 1 | CCP | 02/14/18 19:41 | S.U. | CB81424 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.5 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **12** (5) | | 2540D | | 1 | JLK | 02/15/18 21:29 | mg/L | CB81541 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Influent
Date Sampled: 02/14/18 09:45
Percent Solids: N/A
Initial Volume: 1010
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-01
Sample Matrix: Aqueous
Units: ug/L

Prepared: 2/15/18 14:05

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (99) | | MADEP-EPH | | 1 | ZLC | 02/15/18 21:16 | C8B0192 | CB81502 |
| C19-C36 Aliphatics1 | ND (99) | | MADEP-EPH | | 1 | ZLC | 02/15/18 21:16 | C8B0192 | CB81502 |
| C11-C22 Unadjusted Aromatics1 | ND (99.0) | | EPH8270 | | 1 | VSC | 02/17/18 12:22 | C8B0244 | CB81502 |
| C11-C22 Aromatics1,2 | ND (99.0) | | EPH8270 | | | VSC | 02/17/18 12:22 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CB81502 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *68 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *97 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *90 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *86 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L

Extraction Method: 200.7/6010BNoDigest

## Dissolved Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | **EL** ND (25.0) | | 7010 | | 5 | MJV | 02/19/18 14:09 | 10 | 10 | CB81513 |
| Lead | ND (1.0) | | 6020A | | 1 | NAR | 02/16/18 16:01 | 10 | 10 | CB81513 |
| Mercury | ND (0.20) | | 7470A | | 1 | MJV | 02/16/18 12:33 | 20 | 40 | CB81528 |
| Vanadium | ND (20.0) | | 6010C | | 1 | KJK | 02/15/18 11:59 | 10 | 10 | CB81513 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A
Initial Volume: 1020
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: CAD
Prepared: 2/15/18 9:30

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1221 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1232 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1242 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1248 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1254 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1260 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1262 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |
| Aroclor 1268 | ND (0.10) | | 8082A | | 1 | 02/16/18 10:26 | | CB81407 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *77 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *70 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *75 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A
Initial Volume: 1030
Final Volume: 1
Extraction Method: 3520C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L
Analyst: TJ
Prepared: 2/14/18 17:35

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Ethylhexyl)phthalate | ND (5.8) | | 8270D | | 1 | 02/16/18 17:47 | C8B0237 | CB81322 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *69 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *64 %* | | *15-110* |
| *Surrogate: 2-Chlorophenol-d4* | *67 %* | | *15-110* |
| *Surrogate: 2-Fluorobiphenyl* | *73 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *64 %* | | *15-110* |
| *Surrogate: Nitrobenzene-d5* | *69 %* | | *30-130* |
| *Surrogate: Phenol-d6* | *68 %* | | *15-110* |
| *Surrogate: p-Terphenyl-d14* | *85 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **pH** | **7.82** (N/A) | | 9040 | | 1 | CCP | 02/14/18 19:41 | S.U. | CB81424 |
| **pH Sample Temp** | **Aqueous pH measured in water at 15.6 ºC.** (N/A) | | | | | | | | |
| **Total Suspended Solids** | **48** (5) | | 2540D | | 1 | JLK | 02/15/18 21:29 | mg/L | CB81541 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
Client Sample ID: 171101-Wynn-CC-Effluent
Date Sampled: 02/14/18 09:15
Percent Solids: N/A
Initial Volume: 1000
Final Volume: 1
Extraction Method: 3510C

ESS Laboratory Work Order: 1802262
ESS Laboratory Sample ID: 1802262-02
Sample Matrix: Aqueous
Units: ug/L

Prepared: 2/15/18 14:05

## MADEP-EPH Extractable Petroleum Hydrocarbons

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| C9-C18 Aliphatics1 | ND (100) | | MADEP-EPH | | 1 | ZLC | 02/15/18 22:04 | C8B0192 | CB81502 |
| C19-C36 Aliphatics1 | ND (100) | | MADEP-EPH | | 1 | ZLC | 02/15/18 22:04 | C8B0192 | CB81502 |
| C11-C22 Unadjusted Aromatics1 | ND (100) | | EPH8270 | | 1 | VSC | 02/17/18 12:58 | C8B0244 | CB81502 |
| C11-C22 Aromatics1,2 | ND (100) | | EPH8270 | | | VSC | 02/17/18 12:58 | | [CALC] |
| **Preservative:** | **pH <= 2** | | MADEP-EPH | | | ZLC | | | CB81502 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1-Chlorooctadecane* | *68 %* | | *40-140* |
| *Surrogate: 2-Bromonaphthalene* | *103 %* | | *40-140* |
| *Surrogate: 2-Fluorobiphenyl* | *95 %* | | *40-140* |
| *Surrogate: O-Terphenyl* | *80 %* | | *40-140* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dissolved Metals** | | | | | | | | | | |
| **Batch CB81513 - 200.7/6010BNoDigest** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 5.0 | ug/L | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| **Blank** | | | | | | | | | | |
| Lead | ND | 1.0 | ug/L | | | | | | | |
| Vanadium | ND | 20.0 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Vanadium | 0.5 | | mg/L | 0.5000 | | 97 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Lead | 19.6 | | ug/L | 20.28 | | 97 | 80-120 | | | |
| **LCS** | | | | | | | | | | |
| Arsenic | 23.5 | | ug/L | 25.00 | | 94 | 80-120 | | | |
| **Batch CB81528 - 245.1/7470A** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.20 | ug/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 6.06 | 0.20 | ug/L | 6.000 | | 101 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 6.04 | 0.20 | ug/L | 6.000 | | 101 | 80-120 | 0.2 | 20 | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CB81407 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 | ND | 0.10 | ug/L | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.10 | ug/L | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0396* | | ug/L | *0.05000* | | *79* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CB81407 - 3510C** | | | | | | | | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0378* | | ug/L | *0.05000* | | *76* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0299* | | ug/L | *0.05000* | | *60* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0311* | | ug/L | *0.05000* | | *62* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.85 | 0.10 | ug/L | 1.000 | | 85 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.77 | 0.10 | ug/L | 1.000 | | 77 | 40-140 | | | |
| Aroclor 1260 | 0.91 | 0.10 | ug/L | 1.000 | | 91 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0495* | | ug/L | *0.05000* | | *99* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0446* | | ug/L | *0.05000* | | *89* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0413* | | ug/L | *0.05000* | | *83* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0401* | | ug/L | *0.05000* | | *80* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.86 | 0.10 | ug/L | 1.000 | | 86 | 40-140 | 1 | 20 | |
| Aroclor 1016 [2C] | 0.76 | 0.10 | ug/L | 1.000 | | 76 | 40-140 | 0.6 | 20 | |
| Aroclor 1260 | 0.95 | 0.10 | ug/L | 1.000 | | 95 | 40-140 | 4 | 20 | |
| Aroclor 1260 [2C] | 0.90 | 0.10 | ug/L | 1.000 | | 90 | 40-140 | 5 | 20 | |
| *Surrogate: Decachlorobiphenyl* | *0.0477* | | ug/L | *0.05000* | | *95* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0430* | | ug/L | *0.05000* | | *86* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0381* | | ug/L | *0.05000* | | *76* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0360* | | ug/L | *0.05000* | | *72* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CB81322 - 3520C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 6.0 | ug/L | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *83.3* | | ug/L | *100.0* | | *83* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *148* | | ug/L | *150.0* | | *99* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *119* | | ug/L | *150.0* | | *80* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *92.0* | | ug/L | *100.0* | | *92* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *100* | | ug/L | *150.0* | | *67* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *78.2* | | ug/L | *100.0* | | *78* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *112* | | ug/L | *150.0* | | *75* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *97.2* | | ug/L | *100.0* | | *97* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 82.4 | 6.0 | ug/L | 100.0 | | 82 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81.7* | | ug/L | *100.0* | | *82* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *163* | | ug/L | *150.0* | | *108* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *121* | | ug/L | *150.0* | | *81* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *90.8* | | ug/L | *100.0* | | *91* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *98.6* | | ug/L | *150.0* | | *66* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *76.5* | | ug/L | *100.0* | | *77* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CB81322 - 3520C** | | | | | | | | | | |
| *Surrogate: Phenol-d6* | *113* | | ug/L | *150.0* | | *75* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *99.8* | | ug/L | *100.0* | | *100* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 87.2 | 6.0 | ug/L | 100.0 | | 87 | 40-140 | 6 | 20 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *80.3* | | ug/L | *100.0* | | *80* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *163* | | ug/L | *150.0* | | *108* | *15-110* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *118* | | ug/L | *150.0* | | *79* | *15-110* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *89.3* | | ug/L | *100.0* | | *89* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *94.5* | | ug/L | *150.0* | | *63* | *15-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *76.9* | | ug/L | *100.0* | | *77* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *108* | | ug/L | *150.0* | | *72* | *15-110* | | | |
| *Surrogate: p-Terphenyl-d14* | *113* | | ug/L | *100.0* | | *113* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CB81541 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Suspended Solids | ND | 5 | mg/L | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Suspended Solids | 32 | | mg/L | 34.10 | | 94 | 80-120 | | | |
| **MADEP-EPH Extractable Petroleum Hydrocarbons** | | | | | | | | | | |
| **Batch CB81502 - 3510C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| C19-C36 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| C9-C18 Aliphatics1 | ND | 100 | ug/L | | | | | | | |
| Decane (C10) | ND | 5 | ug/L | | | | | | | |
| Docosane (C22) | ND | 5 | ug/L | | | | | | | |
| Dodecane (C12) | ND | 5 | ug/L | | | | | | | |
| Eicosane (C20) | ND | 5 | ug/L | | | | | | | |
| Hexacosane (C26) | ND | 5 | ug/L | | | | | | | |
| Hexadecane (C16) | ND | 5 | ug/L | | | | | | | |
| Hexatriacontane (C36) | ND | 5 | ug/L | | | | | | | |
| Nonadecane (C19) | ND | 5 | ug/L | | | | | | | |
| Nonane (C9) | ND | 5 | ug/L | | | | | | | |
| Octacosane (C28) | ND | 5 | ug/L | | | | | | | |
| Octadecane (C18) | ND | 5 | ug/L | | | | | | | |
| Tetracosane (C24) | ND | 5 | ug/L | | | | | | | |
| Tetradecane (C14) | ND | 5 | ug/L | | | | | | | |
| Triacontane (C30) | ND | 5 | ug/L | | | | | | | |
| *Surrogate: 1-Chlorooctadecane* | *38.6* | | ug/L | *50.00* | | *77* | *40-140* | | | |
| **Blank** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 5.0 | ug/L | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CB81502 - 3510C** | | | | | | | | | | |
| Acenaphthene | ND | 5.0 | ug/L | | | | | | | |
| Acenaphthylene | ND | 5.0 | ug/L | | | | | | | |
| Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)anthracene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(a)pyrene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | ND | 5.0 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | ND | 10.0 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | ND | 100 | ug/L | | | | | | | |
| Chrysene | ND | 10.0 | ug/L | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 5.0 | ug/L | | | | | | | |
| Fluoranthene | ND | 10.0 | ug/L | | | | | | | |
| Fluorene | ND | 5.0 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 5.0 | ug/L | | | | | | | |
| Naphthalene | ND | 10.0 | ug/L | | | | | | | |
| Phenanthrene | ND | 5.0 | ug/L | | | | | | | |
| Pyrene | ND | 5.0 | ug/L | | | | | | | |
| *Surrogate: 2-Bromonaphthalene* | *54.7* | | ug/L | *50.00* | | *109* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *48.5* | | ug/L | *50.00* | | *97* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *44.3* | | ug/L | *50.00* | | *89* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 397 | 100 | ug/L | 400.0 | | 99 | 40-140 | | | |
| C9-C18 Aliphatics1 | 227 | 100 | ug/L | 300.0 | | 76 | 40-140 | | | |
| Decane (C10) | 30 | 5 | ug/L | 50.00 | | 61 | 40-140 | | | |
| Docosane (C22) | 49 | 5 | ug/L | 50.00 | | 97 | 40-140 | | | |
| Dodecane (C12) | 36 | 5 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Eicosane (C20) | 48 | 5 | ug/L | 50.00 | | 96 | 40-140 | | | |
| Hexacosane (C26) | 49 | 5 | ug/L | 50.00 | | 99 | 40-140 | | | |
| Hexadecane (C16) | 45 | 5 | ug/L | 50.00 | | 91 | 40-140 | | | |
| Hexatriacontane (C36) | 53 | 5 | ug/L | 50.00 | | 105 | 40-140 | | | |
| Nonadecane (C19) | 48 | 5 | ug/L | 50.00 | | 96 | 40-140 | | | |
| Nonane (C9) | 24 | 5 | ug/L | 50.00 | | 49 | 30-140 | | | |
| Octacosane (C28) | 50 | 5 | ug/L | 50.00 | | 101 | 40-140 | | | |
| Octadecane (C18) | 45 | 5 | ug/L | 50.00 | | 91 | 40-140 | | | |
| Tetracosane (C24) | 49 | 5 | ug/L | 50.00 | | 98 | 40-140 | | | |
| Tetradecane (C14) | 41 | 5 | ug/L | 50.00 | | 82 | 40-140 | | | |
| Triacontane (C30) | 52 | 5 | ug/L | 50.00 | | 104 | 40-140 | | | |
| *Surrogate: 1-Chlorooctadecane* | *38.7* | | ug/L | *50.00* | | *77* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene | 38.7 | 5.0 | ug/L | 50.00 | | 77 | 40-140 | | | |
| Acenaphthene | 41.8 | 5.0 | ug/L | 50.00 | | 84 | 40-140 | | | |
| Acenaphthylene | 42.8 | 5.0 | ug/L | 50.00 | | 86 | 40-140 | | | |
| Anthracene | 43.1 | 5.0 | ug/L | 50.00 | | 86 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CB81502 - 3510C** | | | | | | | | | | |
| Benzo(a)anthracene | 51.1 | 5.0 | ug/L | 50.00 | | 102 | 40-140 | | | |
| Benzo(a)pyrene | 50.9 | 10.0 | ug/L | 50.00 | | 102 | 40-140 | | | |
| Benzo(b)fluoranthene | 53.9 | 5.0 | ug/L | 50.00 | | 108 | 40-140 | | | |
| Benzo(g,h,i)perylene | 29.2 | 10.0 | ug/L | 50.00 | | 58 | 40-140 | | | |
| Benzo(k)fluoranthene | 55.3 | 10.0 | ug/L | 50.00 | | 111 | 40-140 | | | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 731 | 100 | ug/L | 850.0 | | 86 | 40-140 | | | |
| Chrysene | 50.8 | 10.0 | ug/L | 50.00 | | 102 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 36.2 | 5.0 | ug/L | 50.00 | | 72 | 40-140 | | | |
| Fluoranthene | 44.2 | 10.0 | ug/L | 50.00 | | 88 | 40-140 | | | |
| Fluorene | 41.3 | 5.0 | ug/L | 50.00 | | 83 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 36.4 | 5.0 | ug/L | 50.00 | | 73 | 40-140 | | | |
| Naphthalene | 39.5 | 10.0 | ug/L | 50.00 | | 79 | 40-140 | | | |
| Phenanthrene | 44.1 | 5.0 | ug/L | 50.00 | | 88 | 40-140 | | | |
| Pyrene | 44.9 | 5.0 | ug/L | 50.00 | | 90 | 40-140 | | | |
| *Surrogate: 2-Bromonaphthalene* | *47.4* | | ug/L | *50.00* | | *95* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *46.6* | | ug/L | *50.00* | | *93* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *42.0* | | ug/L | *50.00* | | *84* | *40-140* | | | |
| **LCS** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | | |
| **LCS Dup** | | | | | | | | | | |
| C19-C36 Aliphatics1 | 412 | 100 | ug/L | 400.0 | | 103 | 40-140 | 4 | 25 | |
| C9-C18 Aliphatics1 | 236 | 100 | ug/L | 300.0 | | 79 | 40-140 | 4 | 25 | |
| Decane (C10) | 31 | 5 | ug/L | 50.00 | | 63 | 40-140 | 4 | 25 | |
| Docosane (C22) | 50 | 5 | ug/L | 50.00 | | 100 | 40-140 | 3 | 25 | |
| Dodecane (C12) | 37 | 5 | ug/L | 50.00 | | 74 | 40-140 | 3 | 25 | |
| Eicosane (C20) | 50 | 5 | ug/L | 50.00 | | 99 | 40-140 | 3 | 25 | |
| Hexacosane (C26) | 51 | 5 | ug/L | 50.00 | | 102 | 40-140 | 3 | 25 | |
| Hexadecane (C16) | 47 | 5 | ug/L | 50.00 | | 95 | 40-140 | 4 | 25 | |
| Hexatriacontane (C36) | 54 | 5 | ug/L | 50.00 | | 108 | 40-140 | 3 | 25 | |
| Nonadecane (C19) | 50 | 5 | ug/L | 50.00 | | 100 | 40-140 | 4 | 25 | |
| Nonane (C9) | 26 | 5 | ug/L | 50.00 | | 51 | 30-140 | 5 | 25 | |
| Octacosane (C28) | 52 | 5 | ug/L | 50.00 | | 104 | 40-140 | 3 | 25 | |
| Octadecane (C18) | 47 | 5 | ug/L | 50.00 | | 95 | 40-140 | 4 | 25 | |
| Tetracosane (C24) | 51 | 5 | ug/L | 50.00 | | 101 | 40-140 | 3 | 25 | |
| Tetradecane (C14) | 43 | 5 | ug/L | 50.00 | | 86 | 40-140 | 5 | 25 | |
| Triacontane (C30) | 53 | 5 | ug/L | 50.00 | | 107 | 40-140 | 3 | 25 | |
| *Surrogate: 1-Chlorooctadecane* | *37.0* | | ug/L | *50.00* | | *74* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene | 42.6 | 5.0 | ug/L | 50.00 | | 85 | 40-140 | 9 | 20 | |
| Acenaphthene | 46.8 | 5.0 | ug/L | 50.00 | | 94 | 40-140 | 11 | 20 | |
| Acenaphthylene | 48.2 | 5.0 | ug/L | 50.00 | | 96 | 40-140 | 12 | 20 | |
| Anthracene | 47.2 | 5.0 | ug/L | 50.00 | | 94 | 40-140 | 9 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| MADEP-EPH Extractable Petroleum Hydrocarbons | | | | | | | | | | |
| **Batch CB81502 - 3510C** | | | | | | | | | | |
| Benzo(a)anthracene | 56.0 | 5.0 | ug/L | 50.00 | | 112 | 40-140 | 9 | 20 | |
| Benzo(a)pyrene | 56.4 | 10.0 | ug/L | 50.00 | | 113 | 40-140 | 10 | 20 | |
| Benzo(b)fluoranthene | 61.6 | 5.0 | ug/L | 50.00 | | 123 | 40-140 | 13 | 20 | |
| Benzo(g,h,i)perylene | 31.5 | 10.0 | ug/L | 50.00 | | 63 | 40-140 | 8 | 20 | |
| Benzo(k)fluoranthene | 59.9 | 10.0 | ug/L | 50.00 | | 120 | 40-140 | 8 | 20 | |
| C11-C22 Aromatics1,2 | ND | 100 | ug/L wet | | | | | | | |
| C11-C22 Unadjusted Aromatics1 | 809 | 100 | ug/L | 850.0 | | 95 | 40-140 | 10 | 25 | |
| Chrysene | 55.8 | 10.0 | ug/L | 50.00 | | 112 | 40-140 | 9 | 20 | |
| Dibenzo(a,h)Anthracene | 39.0 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | 8 | 20 | |
| Fluoranthene | 48.6 | 10.0 | ug/L | 50.00 | | 97 | 40-140 | 9 | 20 | |
| Fluorene | 47.5 | 5.0 | ug/L | 50.00 | | 95 | 40-140 | 14 | 20 | |
| Indeno(1,2,3-cd)Pyrene | 38.8 | 5.0 | ug/L | 50.00 | | 78 | 40-140 | 7 | 20 | |
| Naphthalene | 44.9 | 10.0 | ug/L | 50.00 | | 90 | 40-140 | 13 | 20 | |
| Phenanthrene | 47.6 | 5.0 | ug/L | 50.00 | | 95 | 40-140 | 8 | 20 | |
| Pyrene | 49.8 | 5.0 | ug/L | 50.00 | | 100 | 40-140 | 10 | 20 | |
| *Surrogate: 2-Bromonaphthalene* | *53.7* | | ug/L | *50.00* | | *107* | *40-140* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *49.8* | | ug/L | *50.00* | | *100* | *40-140* | | | |
| *Surrogate: O-Terphenyl* | *44.4* | | ug/L | *50.00* | | *89* | *40-140* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2-Methylnaphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |
| Naphthalene Breakthrough | 0.0 | | % | | | | 0-5 | | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging
ESS Laboratory Work Order: 1802262

**Notes and Definitions**

| | |
|---|---|
| Z16a | Aqueous pH measured in water at 15.6 ºC. |
| Z16 | Aqueous pH measured in water at 15.5 ºC. |
| Z-06 | pH <= 2 |
| U | Analyte included in the analysis, but not detected |
| EL | Elevated Method Reporting Limits due to sample matrix (EL). |
| D | Diluted. |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Dredging

ESS Laboratory Work Order: 1802262

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1802262
Date Received: 2/14/2018
Project Due Date: 2/21/2018
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.5 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 201949 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 01 | 201950 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 01 | 201955 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 201956 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 201957 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 201958 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 01 | 201960 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 01 | 201962 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |
| 02 | 201947 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 02 | 201948 | Yes | NA | Yes | 1L Amber - HCl | HCl | |
| 02 | 201951 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 201952 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 201953 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 201954 | Yes | NA | Yes | 1L Amber - Unpres | NP | |
| 02 | 201959 | Yes | NA | Yes | 1L Poly - Unpres | NP | |
| 02 | 201961 | Yes | NA | Yes | 250 mL Poly - Unpres | NP | |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: Date & Time: 2/14/18 1722
Reviewed

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1802262

Date Received: 2/14/2018

By: [signature]

Date & Time: 2/14/18 1816

Delivered By: [signature]

2/14/18 1816

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1802262 |
| Turn Time | (5-Day) Rush |
| Regulatory State | |
| Reporting Limits | NRWQC(SW) |
| Is this project for any of the following?: | ○ CT RCP ○ MA MCP ○ RGP |
| Electonic Deliverables | ☐ Limit Checker ☑ Standard Excel ☐ Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| SPS New England/ Charter Contracting Co, LLC | 454 | Wynn Dredging |

| Contact Person | Address |
|---|---|
| Katherine Mason | 98 Elm St |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Salisbury | MA | 01952 | |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| 617-608-7317 | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | Dissolved Metals (Arsenic, Lead, Mercury, Vanadium) | TSS/pH | EPH | PCBs | sVOCs (2-ethylhexyl phthalate) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 01 | 2/14/18 | 09:45 | Grab | Aqueous | 171101-Wynn-CC-Influent-1 | | | | 2 | 2 |
| 1 02 | 2/14/18 | 09:45 | Grab | Aqueous | 171101-Wynn-CC-Influent-2 | 1 | | | | |
| 1 03 | 2/14/18 | 09:45 | Grab | Aqueous | 171101-Wynn-CC-Influent-3 | | | 2 | | |
| 1 04 | 2/14/18 | 09:45 | Grab | Aqueous | 171101-Wynn-CC-Influent-4 | | 1 | | | |
| 2 05 | 2/14/18 | 09:15 | Grab | Aqueous | 171101-Wynn-CC-Effluent-1 | | | | 2 | 2 |
| 2 06 | 2/14/18 | 09:15 | Grab | Aqueous | 171101-Wynn-CC-Effluent-2 | 1 | | | | |
| 2 07 | 2/14/18 | 09:15 | Grab | Aqueous | 171101-Wynn-CC-Effluent-3 | | | 2 | | |
| 2 08 | 2/14/18 | 09:15 | Grab | Aqueous | 171101-Wynn-CC-Effluent-4 | | 1 | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| **Container Type:** | AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial | | | | | P | P | AG | AG | AG |
| **Container Volume:** | 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* | | | | | 3 | 6 | 6 | 6 | 6 |
| **Preservation Code:** | 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other* | | | | | 1 | 1 | 2 | 1 | 1 |
| | | | | | **Number of Containers per Sample:** | 2 | 2 | 4 | 4 | 4 |

**Laboratory Use Only**

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 1.5

**Sampled by :** Monica DeCicco

**Comments:** **Please specify "Other" preservative and containers types in this space**

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 2/14/18 13:51 | 2/14/18 13:51 | 2/14/18 16:46 | 2/14/18 17:14 |
| **Relinquished by: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** | **Relinquished By: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** |
| | | | |

# APPENDIX H

Sediment Pre-Characterization Data

| Laboratory Sample Designation | | 20X | 1709279-01 | | 1709279-02 | | 1709279-03 | | 1709279-04 | | 1709279-06 | | 1709279-07 | | 1709279-08 | | 1709279-09 | | 1709279-10 | | 1709279-11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-20 (0-2_3') | | SED-C-48 (0-3_2') | | SED-C-25 (0-3_3') | | SED-C-23 (0-1_9') | | SED-C-22 (0-1_2') | | SED-C-13 (0-2_9') | | SED-C-19 (0-3_0') | | SED-C-DUP1 | | SED-C-28 (0-2_7') | | SED-C-21 (0-2_6') | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 120 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-01 | | 1709279-02 | | 1709279-03 | | 1709279-04 | | 1709279-06 | | 1709279-07 | | 1709279-08 | | 1709279-09 | | 1709279-10 | | 1709279-11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-20 (0-2_3') | | SED-C-48 (0-3_2') | | SED-C-25 (0-3_3') | | SED-C-23 (0-1_9') | | SED-C-22 (0-1_2') | | SED-C-13 (0-2_9') | | SED-C-19 (0-3_0') | | SED-C-DUP1 | | SED-C-28 (0-2_7') | | SED-C-21 (0-2_6') | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorodifluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 1,2-Dichlorobenzene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 1,3-Dichlorobenzene | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 1,4-Dichlorobenzene | mg/kg | 150 | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2,4,5-Trichlorophenol | mg/kg | 8000 | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 2,4,6-Trichlorophenol | mg/kg | 40 | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2,4-Dichlorophenol | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2,4-Dimethylphenol | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2,4-Dinitrophenol | mg/kg | NE | 1.10 | U | 1.96 | U | 1.55 | U | 1.25 | U | 0.953 | U | 1.69 | U | 2.03 | U | 2.17 | U | 2.26 | U | 1.67 | U |
| 2,4-Dinitrotoluene | mg/kg | 2.6 | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2,6-Dinitrotoluene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 2-Chloronaphthalene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 2-Chlorophenol | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2-Methylnaphthalene | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 2-Methylphenol | mg/kg | 4000 | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 2-Nitrophenol | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 3,3´-Dichlorobenzidine | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 3+4-Methylphenol | mg/kg | 4000 | 1.10 | U | 1.96 | U | 1.55 | U | 1.25 | U | 0.953 | U | 1.69 | U | 2.03 | U | 2.17 | U | 2.26 | U | 1.67 | U |

| Laboratory Sample Designation | | 20X | 1709279-01 | | 1709279-02 | | 1709279-03 | | 1709279-04 | | 1709279-06 | | 1709279-07 | | 1709279-08 | | 1709279-09 | | 1709279-10 | | 1709279-11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-20 (0-2_3') | | SED-C-48 (0-3_2') | | SED-C-25 (0-3_3') | | SED-C-23 (0-1_9') | | SED-C-22 (0-1_2') | | SED-C-13 (0-2_9') | | SED-C-19 (0-3_0') | | SED-C-DUP1 | | SED-C-28 (0-2_7') | | SED-C-21 (0-2_6') | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| 4-Bromophenyl-phenylether | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| 4-Chloroaniline | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| 4-Nitrophenol | mg/kg | NE | 2.75 | U | 4.91 | U | 3.87 | U | 3.13 | U | 2.39 | U | 4.24 | U | 5.08 | U | 5.44 | U | 5.65 | U | 4.18 | U |
| Acenaphthene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Acenaphthylene | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| Acetophenone | mg/kg | NE | 1.10 | U | 1.96 | U | 1.55 | U | 1.25 | U | 0.953 | U | 1.69 | U | 2.03 | U | 2.17 | U | 2.26 | U | 1.67 | U |
| Aniline | mg/kg | NE | 2.75 | U | 4.91 | U | 3.87 | U | 3.13 | U | 2.39 | U | 4.24 | U | 5.08 | U | 5.44 | U | 5.65 | U | 4.18 | U |
| Anthracene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Azobenzene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Benzo(a)anthracene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.811 | - | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Benzo(a)pyrene | mg/kg | NE | 0.275 | U | 0.491 | U | 0.416 | - | 0.512 | - | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.607 | - |
| Benzo(b)fluoranthene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Benzo(g,h,i)perylene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Benzo(k)fluoranthene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| bis(2-Chloroethoxy)methane | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| bis(2-Chloroethyl)ether | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | NE | 0.549 | U | 28.5 | D | 7.43 | - | **183** | D | 0.476 | U | **216** | D | **521** | D | **599** | D | **185** | D | 6.26 | - |
| Butylbenzylphthalate | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Chrysene | mg/kg | NE | 0.275 | U | 0.491 | U | 0.463 | - | 0.919 | - | 0.239 | U | 0.424 | U | 0.565 | - | 0.544 | U | 0.568 | - | 0.606 | - |
| Dibenzo(a,h)Anthracene | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| Dibenzofuran | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Diethylphthalate | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Dimethylphthalate | mg/kg | NE | 0.549 | U | **0.979** | U | **0.771** | U | 0.623 | U | 0.476 | U | **0.846** | U | **1.01** | U | **1.09** | U | **1.13** | U | **0.833** | U |
| Di-n-butylphthalate | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Di-n-octylphthalate | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 18.2 | D | 0.476 | U | 12.8 | - | 57.1 | D | 72.9 | D | 7.88 | - | 0.833 | U |
| Fluoranthene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.79 | - | 2.23 | - | 0.476 | U | 0.846 | U | 1.46 | - | 1.09 | U | 1.13 | U | 0.96 | - |
| Fluorene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.647 | - | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Hexachlorobenzene | mg/kg | 2.6 | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| Hexachlorobutadiene | mg/kg | 10 | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Hexachloroethane | mg/kg | 60 | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Isophorone | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Naphthalene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Nitrobenzene | mg/kg | 40 | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| N-Nitrosodimethylamine | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 0.623 | U | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Pentachlorophenol | mg/kg | 2000 | 1.10 | U | 1.96 | U | 1.55 | U | 1.25 | U | 0.953 | U | 1.69 | U | 2.03 | U | 2.17 | U | 2.26 | U | 1.67 | U |
| Phenanthrene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 2.4 | - | 0.476 | U | 0.846 | U | 1.01 | U | 1.09 | U | 1.13 | U | 0.833 | U |
| Phenol | mg/kg | NE | 0.275 | U | 0.491 | U | 0.387 | U | 0.313 | U | 0.239 | U | 0.424 | U | 0.508 | U | 0.544 | U | 0.565 | U | 0.418 | U |
| Pyrene | mg/kg | NE | 0.549 | U | 0.979 | U | 0.771 | U | 1.76 | - | 0.476 | U | 0.846 | U | 1.04 | - | 1.09 | U | 1.13 | U | 0.927 | - |
| Pyridine | mg/kg | 100 | 2.75 | U | 4.91 | U | 3.87 | U | 3.13 | U | 2.39 | U | 4.24 | U | 5.08 | U | 5.44 | U | 5.65 | U | 4.18 | U |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-01 | | 1709279-02 | | 1709279-03 | | 1709279-04 | | 1709279-06 | | 1709279-07 | | 1709279-08 | | 1709279-09 | | 1709279-10 | | 1709279-11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-20 (0-2_3') | | SED-C-48 (0-3_2') | | SED-C-25 (0-3_3') | | SED-C-23 (0-1_9') | | SED-C-22 (0-1_2') | | SED-C-13 (0-2_9') | | SED-C-19 (0-3_0') | | SED-C-DUP1 | | SED-C-28 (0-2_7') | | SED-C-21 (0-2_6') | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Lead | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | **4** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | **20** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0426 | - | 0.0035 | U | 0.0305 | - | 0.0218 | LC, P | 0.0367 | - | 0.0105 | LC, P | 0.0092 | - |
| 4,4´-DDE | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0093 | LC, P | 0.0060 | U |
| 4,4´-DDT | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Aldrin | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| alpha-BHC | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| alpha-Chlordane | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| beta-BHC | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Chlordane (Total) | mg/kg | 0.6 | 0.0322 | U | 0.0582 | U | 0.0466 | U | 0.0371 | U | 0.0283 | U | 0.0529 | U | 0.0819 | U | 0.0873 | U | 0.0690 | U | 0.0483 | U |
| delta-BHC | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Dieldrin | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0231 | - | 0.017 | LC, P | 0.0138 | LC, P | 0.0086 | U | 0.0060 | U |
| Endosulfan I | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0174 | - | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Endosulfan II | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Endosulfan Sulfate | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Endrin | mg/kg | 0.4 | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Endrin Ketone | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| gamma-BHC (Lindane) | mg/kg | 8 | 0.0008 | U | 0.0015 | U | 0.0012 | U | 0.0009 | U | 0.0007 | U | 0.0013 | U | 0.0020 | U | 0.0022 | U | 0.0017 | U | 0.0012 | U |
| gamma-Chlordane | mg/kg | NE | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0048 | LC, P | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Heptachlor | mg/kg | 0.16 | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Heptachlor Epoxide | mg/kg | 0.16 | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Hexachlorobenzene | mg/kg | 2.6 | 0.0057 | LC, P | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0066 | U | 0.0102 | U | 0.0109 | U | 0.0086 | U | 0.0060 | U |
| Methoxychlor | mg/kg | 200 | 0.0040 | U | 0.0073 | U | 0.0058 | U | 0.0046 | U | 0.0035 | U | 0.0151 | LC, P | 0.0102 | U | 0.0194 | LC, P | 0.0086 | U | 0.0060 | U |
| Toxaphene | mg/kg | 10 | 0.201 | U | 0.364 | U | 0.291 | U | 0.232 | U | 0.177 | U | 0.330 | U | 0.512 | U | 0.546 | U | 0.431 | U | 0.302 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.1 | U | 0.09 | U | 0.07 | U | 0.1 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 | U |
| Aroclor 1221 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.1 | U | 0.09 | U | 0.07 | U | 0.1 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 | U |
| Aroclor 1232 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.1 | U | 0.09 | U | 0.07 | U | 0.1 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 | U |
| Aroclor 1242 | mg/kg | NE | 0.08 | U | 0.4 | - | 0.9 | - | 0.2 | - | 0.07 | U | **2.6** | - | **2.6** | P | **1.6** | - | **3.7** | D | 0.9 | - |
| Aroclor 1248 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.1 | U | 0.09 | U | 0.07 | U | 0.1 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 | U |
| Aroclor 1254 | mg/kg | NE | 0.08 | U | 0.7 | - | **1.5** | - | 0.5 | - | 0.1 | - | **2.4** | - | **2.7** | - | **1.7** | - | **4.7** | D | **1.3** | - |
| Aroclor 1260 | mg/kg | NE | 0.08 | U | 0.2 | - | 0.4 | P | 0.2 | - | 0.07 | U | 0.6 | - | 0.7 | P | 0.4 | - | **1.1** | D | 0.3 | - |
| Aroclor 1262 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.1 | U | 0.09 | U | 0.07 | U | 0.1 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 | U |
| Aroclor 1268 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.1 | U | 0.09 | U | 0.07 | U | 0.1 | U | 0.2 | U | 0.2 | U | 0.2 | U | 0.1 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | NE | 0.029 | U | 0.056 | U | 0.205 | U, D | 0.314 | U, D | 0.024 | U | 0.047 | U | 0.078 | U | 0.083 | U | 0.093 | LC, P | 0.152 | LC, P |
| 2,4,5-TP (Silvex) | mg/kg | 20 | 0.029 | U | 0.056 | U | 0.205 | U, D | 4.02 | D | 0.024 | U | 0.047 | U | 0.078 | U | 0.083 | U | 0.184 | LC, P | 0.048 | U |
| 2,4-D | mg/kg | 200 | 0.144 | U | 0.276 | U | 1.02 | U, D | 8.64 | LC, P, D | 0.117 | U | 0.234 | U | 0.385 | U | 0.412 | U | 0.297 | - | 0.235 | U |
| 2,4-DB | mg/kg | NE | 0.145 | U | 0.279 | U | 1.03 | U, D | 1.57 | U, D | 0.118 | U | 0.237 | U | 0.389 | U | 0.417 | U | 0.298 | U | 0.238 | U |
| Dalapon | mg/kg | NE | 0.139 | U | 0.268 | U | 0.984 | U, D | 1.95 | LC, P, D | 0.113 | U | 0.227 | U | 0.373 | U | 0.399 | U | 0.514 | - | 0.544 | - |
| Dicamba | mg/kg | NE | 0.029 | U | 0.354 | LC, P | 0.39 | LC, P, D | 0.311 | U, D | 0.023 | U | 0.047 | U | 0.077 | U | 0.082 | U | 0.29 | LC, P | 0.335 | LC, P |

| Laboratory Sample Designation | | 20X | 1709279-01 | | 1709279-02 | | 1709279-03 | | 1709279-04 | | 1709279-06 | | 1709279-07 | | 1709279-08 | | 1709279-09 | | 1709279-10 | | 1709279-11 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-20 (0-2_3') | | SED-C-48 (0-3_2') | | SED-C-25 (0-3_3') | | SED-C-23 (0-1_9') | | SED-C-22 (0-1_2') | | SED-C-13 (0-2_9') | | SED-C-19 (0-3_0') | | SED-C-DUP1 | | SED-C-28 (0-2_7') | | SED-C-21 (0-2_6') | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorprop | mg/kg | NE | 0.144 | U | 0.276 | U | 1.02 | U, D | 93.4 | D | 0.117 | U | 0.234 | U | 0.385 | U | 0.412 | U | 0.333 | LC, P | 0.401 | LC, P |
| Dinoseb | mg/kg | NE | 0.145 | U | 0.279 | U | 1.03 | U, D | 1.57 | U, D | 0.118 | U | 0.237 | U | 0.389 | U | 0.417 | U | 0.298 | U | 0.238 | U |
| MCPA | mg/kg | NE | 7.10 | U | 13.7 | U | 50.3 | U, D | 76.9 | U | 5.77 | U | 11.6 | U | 19.0 | U | 20.4 | U | 14.6 | U | 11.6 | U |
| MCPP | mg/kg | NE | 7.18 | U | 13.8 | U | 50.8 | U | 36300 | D | 5.83 | U | 11.7 | U | 19.2 | U | 20.6 | U | 14.7 | U | 11.8 | U |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | 8.3 | - | 7.37 | - | 8.12 | - | 7.74 | - | 8.19 | - | 7.06 | - | 7.45 | - | 7.53 | - | 7.19 | - | 8.1 | - |
| Flashpoint | °F | NE | 200 | > | 200 | > | 200 | > | 200 | > | 200 | > | 200 | > | 200 | > | 200 | > | 200 | > | 200 | > |
| Percent Moisture | % | NE | 39 | - | 66 | - | 58 | - | 47 | - | 30 | - | 62 | - | 76 | - | 77 | - | 71 | - | 60 | - |
| Reactive Cyanide | mg/kg | NE | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U | 2.0 | U |
| Reactive Sulfide | mg/kg | NE | 2.0 | U | 47.5 | - | 272 | - | 16.1 | - | 19.9 | - | 2.0 | U | 4.4 | - | 2.0 | U | 5.7 | - | 222 | - |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 5 | 0.071 | - | 0.079 | - | 0.050 | U | 0.094 | - | 0.084 | - | 0.079 | - | 0.050 | U | 0.05 | - | 0.052 | - | 0.050 | U |
| Barium | mg/L | 100 | 0.098 | - | 0.093 | - | 0.122 | - | 0.153 | - | 0.073 | - | 0.050 | U | 0.08 | - | 0.073 | - | 0.050 | U | 0.067 | - |
| Cadmium | mg/L | NE | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U | 0.0100 | U |
| Chromium | mg/L | NE | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U | 0.020 | U |
| Lead | mg/L | 5 | 0.106 | - | 0.147 | - | 0.050 | U | 0.312 | - | 0.258 | - | 0.081 | - | 0.050 | U | 0.050 | U | 0.050 | U | 0.050 | U |
| Mercury | mg/L | NE | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U | 0.00050 | U |
| Selenium | mg/L | NE | 0.100 | U | 0.050 | U | 0.100 | U | 0.050 | U | 0.050 | U | 0.050 | U | 0.100 | U | 0.100 | U | 0.050 | U | 0.100 | U |
| Silver | mg/L | NE | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U | 0.010 | U |

| Laboratory Sample Designation | | 20X | 1709279-12 | | 1709279-15 | | 1709279-17 | | 1709279-18 | | 1709279-19 | | 1709279-20 | | 1709279-21 | | 1709279-22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') | | SED-C-24 (0_-2_9') | | SED-C-17 (0-3_0') | | SED-G-17 (2_4-3_0') | | Trip Blank - 1 | | SED-C-20 (0-2_3') - Dried | | SED-C-48 (0-3_2') - Dried | | SED-C-25 (0-3_3') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0022 | U | 0.0020 | U | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 10 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.112 | U | 0.100 | U | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0156 | - | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0062 | - | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 10 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 120 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0022 | U | 0.0020 | U | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-12 | | 1709279-15 | | 1709279-17 | | 1709279-18 | | 1709279-19 | | 1709279-20 | | 1709279-21 | | 1709279-22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') | | SED-C-24 (0_-2_9') | | SED-C-17 (0-3_0') | | SED-G-17 (2_4-3_0') | | Trip Blank - 1 | | SED-C-20 (0-2_3') - Dried | | SED-C-48 (0-3_2') - Dried | | SED-C-25 (0-3_3') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorodifluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 4 | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0056 | U | 0.0050 | U | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | NE | --- | --- | --- | --- | --- | --- | 0.0112 | U | 0.0075 | U | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 8000 | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 40 | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | NE | 1.01 | U | 1.59 | U | 1.04 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 2.6 | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 4000 | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 4000 | 1.01 | U | 1.59 | U | 1.04 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-12 | | 1709279-15 | | 1709279-17 | | 1709279-18 | | 1709279-19 | | 1709279-20 | | 1709279-21 | | 1709279-22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') | | SED-C-24 (0_-2_9') | | SED-C-17 (0-3_0') | | SED-G-17 (2_4-3_0') | | Trip Blank - 1 | | SED-C-20 (0-2_3') - Dried | | SED-C-48 (0-3_2') - Dried | | SED-C-25 (0-3_3') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| 4-Bromophenyl-phenylether | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | NE | 2.54 | U | 3.99 | U | 2.61 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | NE | 1.01 | U | 1.59 | U | 1.04 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | NE | 2.54 | U | 3.99 | U | 2.61 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | NE | 0.719 | - | 1.12 | - | 0.852 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | NE | 0.572 | - | 1.19 | - | 0.657 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | NE | 0.506 | U | 1.55 | - | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | NE | 0.506 | U | 1.16 | - | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | NE | 0.506 | U | 51.7 | D | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | NE | 0.886 | - | 1.45 | - | 0.897 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | NE | 0.506 | U | **0.796** | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | NE | 1.64 | - | 2.52 | - | 1.4 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 60 | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 40 | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | NE | 0.506 | U | 0.796 | U | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 2000 | 1.01 | U | 1.59 | U | 1.04 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | NE | 0.506 | U | 0.88 | - | 0.519 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | NE | 0.254 | U | 0.399 | U | 0.261 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | NE | 1.45 | - | 1.96 | - | 1.32 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | 100 | 2.54 | U | 3.99 | U | 2.61 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 8.76 | - | **77.7** | D | **76.6** | - |
| Barium | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 22.6 | - | 68.5 | D | 66.3 | - |
| Cadmium | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.48 | U | 2.22 | D | 0.7 | - |
| Chromium | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 22.3 | - | **115** | D | 82.2 | - |

| Laboratory Sample Designation | | 20X | 1709279-12 | | 1709279-15 | | 1709279-17 | | 1709279-18 | | 1709279-19 | | 1709279-20 | | 1709279-21 | | 1709279-22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') | | SED-C-24 (0_-2_9') | | SED-C-17 (0-3_0') | | SED-G-17 (2_4-3_0') | | Trip Blank - 1 | | SED-C-20 (0-2_3') - Dried | | SED-C-48 (0-3_2') - Dried | | SED-C-25 (0-3_3') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Lead | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 16.8 | - | **334** | D | **389** | - |
| Mercury | mg/kg | **4** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.113 | - | 1.47 | D | 1.37 | D |
| Selenium | mg/kg | **20** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.26 | D | 3.71 | D | 6.14 | D |
| Silver | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.48 | U | 1.97 | D | 1.53 | - |
| **Pesticides** | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.6 | 0.0304 | U | 0.0494 | U | 0.0329 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 0.4 | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 8 | 0.0008 | U | 0.0012 | U | 0.0008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | NE | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.16 | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.16 | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | 0.0038 | U | 0.0086 | LC, P | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 200 | 0.0038 | U | 0.0062 | U | 0.0041 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | 10 | 0.190 | U | 0.309 | U | 0.205 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | NE | 0.08 | U | 0.8 | - | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | NE | 0.08 | U | **1.9** | - | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | NE | 0.08 | U | 0.6 | - | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | NE | 0.08 | U | 0.1 | U | 0.08 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | NE | 0.290 | U, D | 0.044 | U | 0.027 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 20 | 0.290 | U, D | 0.236 | - | 0.027 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 200 | 1.44 | U, D | 0.219 | U | 0.133 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | NE | 1.45 | U, D | 0.221 | U | 0.135 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | NE | 1.39 | U, D | 0.212 | U | 0.341 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | NE | 0.287 | U, D | 0.212 | LC, P | 0.173 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-12 | | 1709279-15 | | 1709279-17 | | 1709279-18 | | 1709279-19 | | 1709279-20 | | 1709279-21 | | 1709279-22 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') | | SED-C-24 (0_-2_9') | | SED-C-17 (0-3_0') | | SED-G-17 (2_4-3_0') | | Trip Blank - 1 | | SED-C-20 (0-2_3') - Dried | | SED-C-48 (0-3_2') - Dried | | SED-C-25 (0-3_3') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorprop | mg/kg | NE | 2.02 | LC, P, D | 0.442 | LC, P | 0.765 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | NE | 1.45 | U, D | 0.221 | U | 0.135 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | NE | 71.1 | U, D | 10.8 | U | 6.59 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | NE | 71.8 | U | 11.0 | U | 6.66 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | 7.57 | - | 7.6 | - | 7.91 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | NE | 200 | > | 200 | > | 200 | > | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | NE | 36 | - | 60 | - | 39 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | NE | 2.0 | U | 2.0 | U | 2.0 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | NE | 20.9 | - | 120 | - | 106 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 5 | 0.224 | - | 0.058 | - | 0.192 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | 100 | 0.105 | - | 0.055 | - | 0.089 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | NE | 0.0100 | U | 0.0100 | U | 0.0100 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | NE | 0.020 | U | 0.020 | U | 0.020 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | 5 | 0.206 | - | 0.050 | U | 0.1 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | NE | 0.00050 | U | 0.00050 | U | 0.00050 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | NE | 0.050 | U | 0.050 | U | 0.050 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | NE | 0.010 | U | 0.010 | U | 0.010 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-23 | | 1709279-24 | | 1709279-25 | | 1709279-26 | | 1709279-27 | | 1709279-28 | | 1709279-29 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-23 (0-1_9') - Dried | | SED-C-22 (0-1_2') - Dried | | SED-C-13 (0-2_9') - Dried | | SED-C-19 (0-3_0') - Dried | | SED-C-DUP1 - Dried | | SED-C28 (0-2_7') - Dried | | SED-C-21 (0-2_6') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| **VOCs - Low** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 120 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-23 | | 1709279-24 | | 1709279-25 | | 1709279-26 | | 1709279-27 | | 1709279-28 | | 1709279-29 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-23 (0-1_9') - Dried | | SED-C-22 (0-1_2') - Dried | | SED-C-13 (0-2_9') - Dried | | SED-C-19 (0-3_0') - Dried | | SED-C-DUP1 - Dried | | SED-C28 (0-2_7') - Dried | | SED-C-21 (0-2_6') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorodifluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 8000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 40 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-23 | | 1709279-24 | | 1709279-25 | | 1709279-26 | | 1709279-27 | | 1709279-28 | | 1709279-29 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-23 (0-1_9') - Dried | | SED-C-22 (0-1_2') - Dried | | SED-C-13 (0-2_9') - Dried | | SED-C-19 (0-3_0') - Dried | | SED-C-DUP1 - Dried | | SED-C28 (0-2_7') - Dried | | SED-C-21 (0-2_6') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| 4-Bromophenyl-phenylether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 60 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 40 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **100** | **69.4** | - | **32.3** | - | **88.6** | - | **92.7** | - | **109** | - | **72.9** | - | **68.7** | - |
| Barium | mg/kg | 2000 | 58.5 | - | 26.4 | - | 52.5 | - | 59.6 | - | 61 | - | 59.9 | - | 56.1 | - |
| Cadmium | mg/kg | 20 | 1.42 | - | 0.47 | U | 0.92 | - | 1.02 | - | 1.08 | - | 0.96 | - | 0.49 | U |
| Chromium | mg/kg | **100** | 49.6 | - | 22.3 | - | 86.6 | - | **116** | - | **120** | - | **101** | - | 77.1 | - |

| Laboratory Sample Designation | | 20X | 1709279-23 | | 1709279-24 | | 1709279-25 | | 1709279-26 | | 1709279-27 | | 1709279-28 | | 1709279-29 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-23 (0-1_9') - Dried | | SED-C-22 (0-1_2') - Dried | | SED-C-13 (0-2_9') - Dried | | SED-C-19 (0-3_0') - Dried | | SED-C-DUP1 - Dried | | SED-C28 (0-2_7') - Dried | | SED-C-21 (0-2_6') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Lead | mg/kg | **100** | **434** | - | 97.3 | - | **254** | - | **282** | - | **294** | - | **310** | - | **343** | - |
| Mercury | mg/kg | **4** | 3.14 | D | 0.471 | - | 1.62 | D | 1.76 | D | 2.07 | D | 1.25 | D | 1.26 | D |
| Selenium | mg/kg | **20** | **26.1** | D | 3.13 | D | 8.04 | D | 3.46 | D | 3.69 | D | 3.62 | D | 5.36 | D |
| Silver | mg/kg | 100 | 1.27 | - | 0.47 | U | 1.23 | - | 2.13 | - | 2.44 | - | 1.72 | - | 1.5 | - |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-23 | | 1709279-24 | | 1709279-25 | | 1709279-26 | | 1709279-27 | | 1709279-28 | | 1709279-29 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-23 (0-1_9') - Dried | | SED-C-22 (0-1_2') - Dried | | SED-C-13 (0-2_9') - Dried | | SED-C-19 (0-3_0') - Dried | | SED-C-DUP1 - Dried | | SED-C28 (0-2_7') - Dried | | SED-C-21 (0-2_6') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorprop | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | 5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-30 | | 1709279-31 | | 1709279-32 | |
|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') - Dried | | SED-C-24 (0_-2_9') - Dried | | SED-C-17 (0-3_0') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| **VOCs - Low** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4000 | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 2000 | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 120 | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-30 | | 1709279-31 | | 1709279-32 | |
|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') - Dried | | SED-C-24 (0_-2_9') - Dried | | SED-C-17 (0-3_0') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorodifluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 14 | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 4 | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 8000 | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 40 | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 4000 | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 4000 | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-30 | | 1709279-31 | | 1709279-32 | |
|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') - Dried | | SED-C-24 (0_-2_9') - Dried | | SED-C-17 (0-3_0') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| 4-Bromophenyl-phenylether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 60 | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 40 | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 2000 | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | 100 | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | |
| Arsenic | mg/kg | **100** | **59.1** | D | **74.5** | - | **178** | - |
| Barium | mg/kg | 2000 | 54.1 | D | 67.3 | - | 81.9 | - |
| Cadmium | mg/kg | 20 | 0.87 | U, D | 0.99 | - | 1.24 | - |
| Chromium | mg/kg | **100** | 42.4 | D | 75.3 | - | 60.7 | - |

| Laboratory Sample Designation | | 20X | 1709279-30 | | 1709279-31 | | 1709279-32 | |
|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') - Dried | | SED-C-24 (0_-2_9') - Dried | | SED-C-17 (0-3_0') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Lead | mg/kg | **100** | **256** | D | **345** | - | **1940** | - |
| Mercury | mg/kg | **4** | 1.77 | D | 1.23 | D | **8.25** | D |
| Selenium | mg/kg | **20** | 9.59 | D | 4.57 | D | **317** | D |
| Silver | mg/kg | 100 | 0.87 | U, D | 1.35 | - | 1.02 | - |
| | | | | | | | | |
| **Pesticides** | | | | | | | | |
| 4,4´-DDD | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.6 | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 0.4 | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 8 | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.16 | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.16 | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 200 | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | 10 | --- | --- | --- | --- | --- | --- |
| | | | | | | | | |
| **PCBs** | | | | | | | | |
| Aroclor 1016 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| | | | | | | | | |
| **Herbicides** | | | | | | | | |
| 2,4,5-T | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 20 | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 200 | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | NE | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709279-30 | | 1709279-31 | | 1709279-32 | |
|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-18 (0-1_0') - Dried | | SED-C-24 (0_-2_9') - Dried | | SED-C-17 (0-3_0') - Dried | |
| Sample Date | | | 09/12/2017 | | 09/12/2017 | | 09/12/2017 | |
| Dichlorprop | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | NE | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | NE | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | |
| Arsenic | mg/L | 5 | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | 100 | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | NE | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | NE | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | 5 | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | NE | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | NE | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | NE | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709323-01 | | 1709323-02 | | 1709323-03 | | 1709323-04 | | 1709323-05 | | 1709323-06 | | 1709323-07 | | 1709323-08 | | 1709323-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-12 (0-1_8') | | SED-G-12 (1_08-1_44') | | SED-C-15 (0-1_9') | | SED-G-15 (1_52-1_9') | | SED-C-16 (0-3_1') | | SED-G-16 (0_62-1_24') | | SED-C-49 (0-2_5') | | SED-G-49 (2_0-2_5') | | SED-C-14 (0-2_8') | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | NE | --- | --- | 0.0028 | U | --- | --- | 0.0019 | U | --- | --- | 0.0026 | U | --- | --- | **0.0063** | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | 14 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0616 | - | --- | --- |
| 1,2-Dichloroethane | mg/kg | 10 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 1,4-Dioxane | mg/kg | NE | --- | --- | 0.138 | U | --- | --- | 0.0925 | U | --- | --- | 0.131 | U | --- | --- | **0.315** | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 2-Butanone | mg/kg | 4000 | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.152 | - | --- | --- |
| 2-Chlorotoluene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 2-Hexanone | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| Acetone | mg/kg | NE | --- | --- | 0.0503 | - | --- | --- | 0.0122 | - | --- | --- | 0.0169 | - | --- | --- | 1.05 | - | --- | --- |
| Benzene | mg/kg | 10 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Bromobenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Bromodichloromethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Bromoform | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Bromomethane | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| Carbon Disulfide | mg/kg | NE | --- | --- | 0.0172 | - | --- | --- | 0.0104 | - | --- | --- | 0.0147 | - | --- | --- | 0.0158 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | 10 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Chlorobenzene | mg/kg | 2000 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0500 | - | --- | --- |
| Chloroethane | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| Chloroform | mg/kg | 120 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Chloromethane | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | **0.0158** | U | --- | --- |
| Dibromochloromethane | mg/kg | NE | --- | --- | 0.0028 | U | --- | --- | 0.0019 | U | --- | --- | 0.0026 | U | --- | --- | **0.0063** | U | --- | --- |
| Dibromomethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| Diethyl Ether | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0160 | - | --- | --- |

| Laboratory Sample Designation | | 20X | 1709323-01 | | 1709323-02 | | 1709323-03 | | 1709323-04 | | 1709323-05 | | 1709323-06 | | 1709323-07 | | 1709323-08 | | 1709323-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-12 (0-1_8') | | SED-G-12 (1_08-1_44') | | SED-C-15 (0-1_9') | | SED-G-15 (1_52-1_9') | | SED-C-16 (0-3_1') | | SED-G-16 (0_62-1_24') | | SED-C-49 (0-2_5') | | SED-G-49 (2_0-2_5') | | SED-C-14 (0-2_8') | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | |
| Di-isopropyl ether | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Ethylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Isopropylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Methylene Chloride | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| n-Butylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| n-Propylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| sec-Butylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Styrene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| tert-Butylbenzene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Tetrachloroethene | mg/kg | 14 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Tetrahydrofuran | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Toluene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | **0.0158** | U | --- | --- |
| Trichloroethene | mg/kg | 10 | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Vinyl Chloride | mg/kg | 4 | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| Xylene O | mg/kg | NE | --- | --- | 0.0069 | U | --- | --- | 0.0046 | U | --- | --- | 0.0066 | U | --- | --- | 0.0158 | U | --- | --- |
| Xylene P,M | mg/kg | NE | --- | --- | 0.0138 | U | --- | --- | 0.0093 | U | --- | --- | 0.0131 | U | --- | --- | 0.0315 | U | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 1,2-Dichlorobenzene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 1,3-Dichlorobenzene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 1,4-Dichlorobenzene | mg/kg | 150 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2,4,5-Trichlorophenol | mg/kg | 8000 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 2,4,6-Trichlorophenol | mg/kg | 40 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2,4-Dichlorophenol | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2,4-Dimethylphenol | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2,4-Dinitrophenol | mg/kg | NE | 2.82 | U | --- | --- | 2.45 | U | --- | --- | 2.65 | U | --- | --- | 1.77 | U | --- | --- | 2.55 | U |
| 2,4-Dinitrotoluene | mg/kg | 2.6 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2,6-Dinitrotoluene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 2-Chloronaphthalene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 2-Chlorophenol | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2-Methylnaphthalene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| 2-Methylphenol | mg/kg | 4000 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 2-Nitrophenol | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 3,3´-Dichlorobenzidine | mg/kg | NE | 0.282 | U | --- | --- | 0.979 | U | --- | --- | 0.265 | U | --- | --- | 0.442 | U | --- | --- | 0.255 | U |
| 3+4-Methylphenol | mg/kg | 4000 | 1.13 | U | --- | --- | 0.979 | U | --- | --- | 1.06 | U | --- | --- | 1.77 | U | --- | --- | 1.02 | U |
| 4-Bromophenyl-phenylether | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| 4-Chloroaniline | mg/kg | NE | 0.282 | U | --- | --- | 0.979 | U | --- | --- | 0.265 | U | --- | --- | 0.442 | U | --- | --- | 0.255 | U |
| 4-Nitrophenol | mg/kg | NE | 2.82 | U | --- | --- | 2.45 | U | --- | --- | 2.65 | U | --- | --- | 4.42 | U | --- | --- | 2.55 | U |
| Acenaphthene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Acenaphthylene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |

| Laboratory Sample Designation | | 20X | 1709323-01 | | 1709323-02 | | 1709323-03 | | 1709323-04 | | 1709323-05 | | 1709323-06 | | 1709323-07 | | 1709323-08 | | 1709323-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-12 (0-1_8') | | SED-G-12 (1_08-1_44') | | SED-C-15 (0-1_9') | | SED-G-15 (1_52-1_9') | | SED-C-16 (0-3_1') | | SED-G-16 (0_62-1_24') | | SED-C-49 (0-2_5') | | SED-G-49 (2_0-2_5') | | SED-C-14 (0-2_8') | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | |
| Acetophenone | mg/kg | NE | 1.13 | U | --- | --- | 0.979 | U | --- | --- | 1.06 | U | --- | --- | 1.77 | U | --- | --- | 1.02 | U |
| Aniline | mg/kg | NE | 2.82 | U | --- | --- | 2.45 | U | --- | --- | 2.65 | U | --- | --- | 4.42 | U | --- | --- | 2.55 | U |
| Anthracene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Azobenzene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Benzo(a)anthracene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Benzo(a)pyrene | mg/kg | NE | 0.424 | - | --- | --- | 0.245 | U | --- | --- | 0.265 | U | --- | --- | 0.442 | U | --- | --- | 0.255 | U |
| Benzo(b)fluoranthene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Benzo(g,h,i)perylene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Benzo(k)fluoranthene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| bis(2-Chloroethoxy)methane | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| bis(2-Chloroethyl)ether | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | NE | 3.21 | - | --- | --- | 1.37 | - | --- | --- | 29.8 | D | --- | --- | 5.16 | - | --- | --- | 0.508 | U |
| Butylbenzylphthalate | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Chrysene | mg/kg | NE | 0.596 | - | --- | --- | 0.245 | U | --- | --- | 0.309 | - | --- | --- | 0.442 | U | --- | --- | 0.255 | U |
| Dibenzo(a,h)Anthracene | mg/kg | NE | 0.282 | U | --- | --- | 0.245 | U | --- | --- | 0.265 | U | --- | --- | 0.442 | U | --- | --- | 0.255 | U |
| Dibenzofuran | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Diethylphthalate | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Dimethylphthalate | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | **0.881** | U | --- | --- | 0.508 | U |
| Di-n-butylphthalate | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Di-n-octylphthalate | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.726 | - | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Fluoranthene | mg/kg | NE | 1.21 | - | --- | --- | 0.489 | U | --- | --- | 0.629 | - | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Fluorene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Hexachlorobenzene | mg/kg | 2.6 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| Hexachlorobutadiene | mg/kg | 10 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Hexachloroethane | mg/kg | 60 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.442 | U | --- | --- | 0.508 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Isophorone | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Naphthalene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Nitrobenzene | mg/kg | 40 | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| N-Nitrosodimethylamine | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Pentachlorophenol | mg/kg | 2000 | 2.82 | U | --- | --- | 2.45 | U | --- | --- | 2.65 | U | --- | --- | 1.75 | U | --- | --- | 2.55 | U |
| Phenanthrene | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Phenol | mg/kg | NE | 0.562 | U | --- | --- | 0.489 | U | --- | --- | 0.529 | U | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Pyrene | mg/kg | NE | 1.01 | - | --- | --- | 0.489 | U | --- | --- | 0.564 | - | --- | --- | 0.881 | U | --- | --- | 0.508 | U |
| Pyridine | mg/kg | 100 | 2.82 | U | --- | --- | 2.45 | U | --- | --- | 2.65 | U | --- | --- | 4.42 | U | --- | --- | 2.55 | U |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | **20** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |

| Laboratory Sample Designation | | 20X | 1709323-01 | | 1709323-02 | | 1709323-03 | | 1709323-04 | | 1709323-05 | | 1709323-06 | | 1709323-07 | | 1709323-08 | | 1709323-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-12 (0-1_8') | | SED-G-12 (1_08-1_44') | | SED-C-15 (0-1_9') | | SED-G-15 (1_52-1_9') | | SED-C-16 (0-3_1') | | SED-G-16 (0_62-1_24') | | SED-C-49 (0-2_5') | | SED-G-49 (2_0-2_5') | | SED-C-14 (0-2_8') | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDE | mg/kg | NE | 0.0043 | U | --- | --- | 0.0058 | LC, P | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| 4,4´-DDT | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Aldrin | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| alpha-BHC | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| alpha-Chlordane | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| beta-BHC | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Chlordane (Total) | mg/kg | 0.6 | 0.0343 | U | --- | --- | 0.03 | U | --- | --- | 0.0308 | U | --- | --- | 0.0555 | U | --- | --- | 0.0313 | U |
| delta-BHC | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Dieldrin | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Endosulfan I | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Endosulfan II | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Endosulfan Sulfate | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Endrin | mg/kg | 0.4 | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Endrin Ketone | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| gamma-BHC (Lindane) | mg/kg | 8 | 0.0009 | U | --- | --- | 0.0008 | U | --- | --- | 0.0008 | U | --- | --- | 0.0014 | U | --- | --- | 0.0008 | U |
| gamma-Chlordane | mg/kg | NE | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Heptachlor | mg/kg | 0.16 | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Heptachlor Epoxide | mg/kg | 0.16 | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Hexachlorobenzene | mg/kg | 2.6 | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Methoxychlor | mg/kg | 200 | 0.0043 | U | --- | --- | 0.0038 | U | --- | --- | 0.0039 | U | --- | --- | 0.0069 | U | --- | --- | 0.0039 | U |
| Toxaphene | mg/kg | 10 | 0.214 | U | --- | --- | 0.188 | U | --- | --- | 0.193 | U | --- | --- | 0.347 | U | --- | --- | 0.196 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | NE | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U |
| Aroclor 1221 | mg/kg | NE | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U |
| Aroclor 1232 | mg/kg | NE | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U |
| Aroclor 1242 | mg/kg | NE | 0.2 | - | --- | --- | 0.2 | - | --- | --- | 0.08 | U | --- | --- | 0.7 | - | --- | --- | 0.08 | U |
| Aroclor 1248 | mg/kg | NE | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U |
| Aroclor 1254 | mg/kg | NE | 0.2 | - | --- | --- | 0.5 | - | --- | --- | 0.08 | U | --- | --- | **1.4** | - | --- | --- | 0.08 | U |
| Aroclor 1260 | mg/kg | NE | 0.09 | U | --- | --- | 0.2 | - | --- | --- | 0.08 | U | --- | --- | 0.4 | - | --- | --- | 0.08 | U |
| Aroclor 1262 | mg/kg | NE | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U |
| Aroclor 1268 | mg/kg | NE | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | NE | 0.149 | U, D | --- | --- | 0.029 | U | --- | --- | 3.02 | U, D | --- | --- | 0.255 | U, D | --- | --- | 0.029 | U |
| 2,4,5-TP (Silvex) | mg/kg | 20 | 0.149 | U, D | --- | --- | 0.029 | U | --- | --- | 3.02 | U, D | --- | --- | 0.255 | U, D | --- | --- | 0.029 | U |
| 2,4-D | mg/kg | 200 | 0.736 | U, D | --- | --- | 0.189 | - | --- | --- | 14.9 | U, D | --- | --- | 1.26 | U, D | --- | --- | 0.142 | U |
| 2,4-DB | mg/kg | NE | 0.743 | U, D | --- | --- | 0.144 | U | --- | --- | 15.1 | U, D | --- | --- | 1.27 | U, D | --- | --- | 0.143 | U |
| Dalapon | mg/kg | NE | 0.712 | U, D | --- | --- | 0.138 | U | --- | --- | 14.5 | U, D | --- | --- | 1.22 | U, D | --- | --- | 0.137 | U |
| Dicamba | mg/kg | NE | 0.182 | LC, P, D | --- | --- | 0.156 | LC, P | --- | --- | 2.99 | U, D | --- | --- | 0.252 | U, D | --- | --- | 0.028 | U |
| Dichlorprop | mg/kg | NE | 1.37 | LC, P, D | --- | --- | 0.191 | LC, P | --- | --- | 14.9 | U, D | --- | --- | 1.26 | U, D | --- | --- | 0.142 | U |
| Dinoseb | mg/kg | NE | 0.743 | U, D | --- | --- | 0.144 | U | --- | --- | 15.1 | U, D | --- | --- | 1.27 | U, D | --- | --- | 0.143 | U |
| MCPA | mg/kg | NE | 36.4 | U, D | --- | --- | 7.06 | U | --- | --- | 73.8 | # | --- | --- | 62.3 | U, D | --- | --- | 7.01 | U |
| MCPP | mg/kg | NE | 36.8 | # | --- | --- | 7.13 | # | --- | --- | 74.6 | # | --- | --- | 63.0 | # | --- | --- | 7.08 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | 8.00 | - | --- | --- | 7.98 | - | --- | --- | 7.93 | - | --- | --- | 6.77 | - | --- | --- | 8.15 | - |
| Flashpoint | °F | NE | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > |
| Percent Moisture | % | NE | 42 | - | --- | --- | 34 | - | --- | --- | 37 | - | --- | --- | 64 | - | --- | --- | 36 | - |

| Laboratory Sample Designation | | 20X | 1709323-01 | | 1709323-02 | | 1709323-03 | | 1709323-04 | | 1709323-05 | | 1709323-06 | | 1709323-07 | | 1709323-08 | | 1709323-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-12 (0-1_8') | | SED-G-12 (1_08-1_44') | | SED-C-15 (0-1_9') | | SED-G-15 (1_52-1_9') | | SED-C-16 (0-3_1') | | SED-G-16 (0_62-1_24') | | SED-C-49 (0-2_5') | | SED-G-49 (2_0-2_5') | | SED-C-14 (0-2_8') | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | |
| Reactive Cyanide | mg/kg | NE | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U |
| Reactive Sulfide | mg/kg | NE | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | NE | 0.350 | - | --- | --- | 0.229 | - | --- | --- | 0.234 | - | --- | --- | 0.131 | - | --- | --- | 0.104 | - |
| Barium | mg/L | NE | 0.126 | - | --- | --- | 0.118 | - | --- | --- | 0.098 | - | --- | --- | 0.056 | - | --- | --- | 0.090 | - |
| Cadmium | mg/L | NE | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |
| Chromium | mg/L | NE | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.038 | - | --- | --- | 0.02 | U | --- | --- | 0.064 | - |
| Lead | mg/L | NE | 0.577 | - | --- | --- | 0.592 | - | --- | --- | 0.165 | - | --- | --- | 0.05 | U | --- | --- | 0.200 | - |
| Mercury | mg/L | NE | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U |
| Selenium | mg/L | NE | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Silver | mg/L | NE | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 20X | 1709323-10 | | 1709323-11 | | 1709323-12 | | 1709323-13 | | 1709323-14 | | 1709323-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-G-14 (1_68-2_24') | | SED-C-12 (0-1_8') - Dried | | SED-C-15 (0-1_9') - Dried | | SED-C-16 (0-3_1') - Dried | | SED-C-49 (0-2_5') - Dried | | SED-C-14 (0-2_8') - Dried | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | NE | 0.0023 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 14 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 10 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | NE | 0.115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4000 | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | NE | 0.0122 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 10 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 10 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 2000 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 120 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | NE | 0.0023 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709323-10 | | 1709323-11 | | 1709323-12 | | 1709323-13 | | 1709323-14 | | 1709323-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-G-14 (1_68-2_24') | | SED-C-12 (0-1_8') - Dried | | SED-C-15 (0-1_9') - Dried | | SED-C-16 (0-3_1') - Dried | | SED-C-49 (0-2_5') - Dried | | SED-C-14 (0-2_8') - Dried | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Di-isopropyl ether | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 14 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 10 | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 4 | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | NE | 0.0058 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | NE | 0.0115 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 150 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 8000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 40 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 4000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709323-10 | | 1709323-11 | | 1709323-12 | | 1709323-13 | | 1709323-14 | | 1709323-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-G-14 (1_68-2_24') | | SED-C-12 (0-1_8') - Dried | | SED-C-15 (0-1_9') - Dried | | SED-C-16 (0-3_1') - Dried | | SED-C-49 (0-2_5') - Dried | | SED-C-14 (0-2_8') - Dried | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Acetophenone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 60 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 40 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 2000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **100** | --- | --- | **138** | - | **130** | - | **32.2** | - | **270** | - | 8.77 | - |
| Barium | mg/kg | 2000 | --- | --- | 54.3 | - | 52.0 | - | 43.1 | - | 72.3 | - | 19.8 | - |
| Cadmium | mg/kg | 20 | --- | --- | 0.51 | - | 1.11 | - | 0.49 | U | 1.62 | - | 0.49 | U |
| Chromium | mg/kg | 100 | --- | --- | 48.2 | - | 58.6 | - | 35.9 | - | 79.9 | - | 18.7 | - |
| Lead | mg/kg | **100** | --- | --- | **259** | - | **458** | - | 81.8 | - | **390** | - | 21.8 | - |
| Mercury | mg/kg | 4 | --- | --- | 1.63 | D | 3.37 | D | 0.344 | - | 2.25 | D | 0.099 | - |
| Selenium | mg/kg | **20** | --- | --- | 10.2 | D | **22.5** | D | 4.56 | D | 6.18 | D | 0.81 | D |
| Silver | mg/kg | 100 | --- | --- | 0.47 | U | 0.92 | - | 0.49 | U | 1.46 | - | 0.49 | U |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709323-10 | | 1709323-11 | | 1709323-12 | | 1709323-13 | | 1709323-14 | | 1709323-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-G-14 (1_68-2_24') | | SED-C-12 (0-1_8') - Dried | | SED-C-15 (0-1_9') - Dried | | SED-C-16 (0-3_1') - Dried | | SED-C-49 (0-2_5') - Dried | | SED-C-14 (0-2_8') - Dried | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| 4,4´-DDE | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 0.4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 2.6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 20X | 1709323-10 | | 1709323-11 | | 1709323-12 | | 1709323-13 | | 1709323-14 | | 1709323-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-G-14 (1_68-2_24') | | SED-C-12 (0-1_8') - Dried | | SED-C-15 (0-1_9') - Dried | | SED-C-16 (0-3_1') - Dried | | SED-C-49 (0-2_5') - Dried | | SED-C-14 (0-2_8') - Dried | |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Reactive Cyanide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | |
| Arsenic | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-RCS2 | 2014-S1GW1 | 2014-S1GW2 | 2014-S1GW3 | 2014-S2GW1 | 2014-S2GW2 | 2014-S2GW3 | 2014-S3GW1 | 2014-S3GW2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | | | | | | | | |
| Sample Date | | | | | | | | | | | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.1 | 0.1 | 0.1 | 0.1 | 80 | 0.1 | 0.1 | 100 | 0.1 | 0.1 |
| 1,1,1-Trichloroethane | mg/kg | 30 | 600 | 30 | 500 | 500 | 30 | 600 | 1000 | 30 | 600 |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.005** | 0.02 | **0.005** | 0.02 | 10 | **0.005** | 0.02 | 10 | **0.005** | 0.02 |
| 1,1,2-Trichloroethane | mg/kg | 0.1 | 2 | 0.1 | 2 | 40 | 0.1 | 2 | 60 | 0.1 | 2 |
| 1,1-Dichloroethane | mg/kg | 0.4 | 9 | 0.4 | 9 | 500 | 0.4 | 5 | 1000 | 0.4 | 9 |
| 1,1-Dichloroethene | mg/kg | 3 | 40 | 3 | 40 | 500 | 3 | 40 | 1000 | 3 | 40 |
| 1,1-Dichloropropene | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 1,2,3-Trichlorobenzene | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 1,2,3-Trichloropropane | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | 6 | 2 | 6 | 700 | 2 | 70 | 900 | 2 | 6 |
| 1,2,4-Trimethylbenzene | mg/kg | 1000 | 10000 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 10 | 100 | NE | NE | NE | NE | NE | NE | NE | NE |
| 1,2-Dibromoethane | mg/kg | 0.1 | 0.1 | 0.1 | 0.1 | 1 | 0.1 | 0.1 | 4 | 0.1 | 0.1 |
| 1,2-Dichlorobenzene | mg/kg | 9 | 100 | 9 | 100 | 300 | 9 | 30 | 300 | 9 | 100 |
| 1,2-Dichloroethane | mg/kg | 0.1 | 0.1 | 0.1 | 0.1 | 20 | 0.1 | 0.1 | 90 | 0.1 | 0.1 |
| 1,2-Dichloropropane | mg/kg | 0.1 | 0.1 | 0.1 | 0.1 | 30 | 0.1 | 0.1 | 100 | 0.1 | 0.1 |
| 1,3,5-Trimethylbenzene | mg/kg | 10 | 100 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| 1,3-Dichlorobenzene | mg/kg | 3 | 200 | 3 | 100 | 100 | 1 | 40 | 500 | 3 | 200 |
| 1,3-Dichloropropane | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | 1 | 0.7 | 1 | 80 | 0.7 | 4 | 300 | 0.7 | 1 |
| 1,4-Dioxane | mg/kg | **0.2** | 6 | **0.2** | 6 | 20 | **0.2** | 6 | 500 | **0.2** | 6 |
| 2,2-Dichloropropane | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 2-Butanone | mg/kg | 4 | 50 | 4 | 50 | 400 | 4 | 50 | 400 | 4 | 50 |
| 2-Chlorotoluene | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2-Hexanone | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 4-Chlorotoluene | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| 4-Isopropyltoluene | mg/kg | 100 | 500 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| 4-Methyl-2-Pentanone | mg/kg | 0.4 | 50 | 0.4 | 50 | 400 | 0.4 | 50 | 400 | 0.4 | 50 |
| Acetone | mg/kg | 6 | 50 | 6 | 50 | 400 | 6 | 50 | 400 | 6 | 50 |
| Benzene | mg/kg | 2 | 200 | 2 | 40 | 40 | 2 | 200 | 200 | 2 | 400 |
| Bromobenzene | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Bromochloromethane | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Bromodichloromethane | mg/kg | 0.1 | 0.1 | 0.1 | 0.1 | 30 | 0.1 | 0.1 | 100 | 0.1 | 0.1 |
| Bromoform | mg/kg | 0.1 | 1 | 0.1 | 1 | 300 | 0.1 | 1 | 800 | 0.1 | 1 |
| Bromomethane | mg/kg | 0.5 | 0.5 | 0.5 | 0.5 | 30 | 0.5 | 0.5 | 30 | 0.5 | 0.5 |
| Carbon Disulfide | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Carbon Tetrachloride | mg/kg | 5 | 5 | 10 | 5 | 30 | 10 | 5 | 60 | 10 | 5 |
| Chlorobenzene | mg/kg | 1 | 3 | 1 | 3 | 100 | 1 | 3 | 100 | 1 | 3 |
| Chloroethane | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Chloroform | mg/kg | 0.2 | 0.2 | 0.4 | 0.2 | 500 | 0.4 | 0.3 | 800 | 0.4 | 0.2 |
| Chloromethane | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| cis-1,2-Dichloroethene | mg/kg | 0.1 | 0.1 | 0.3 | 0.1 | 100 | 0.3 | 0.4 | 500 | 0.3 | 0.1 |
| cis-1,3-Dichloropropene | mg/kg | **0.01** | 0.1 | **0.01** | 0.4 | 20 | **0.01** | 0.4 | 70 | **0.01** | 0.4 |
| Dibromochloromethane | mg/kg | **0.005** | 0.03 | **0.005** | 0.03 | 20 | **0.005** | 0.03 | 100 | **0.005** | 0.03 |
| Dibromomethane | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Dichlorodifluoromethane | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Diethyl Ether | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Di-isopropyl ether | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-RCS2 | 2014-S1GW1 | 2014-S1GW2 | 2014-S1GW3 | 2014-S2GW1 | 2014-S2GW2 | 2014-S2GW3 | 2014-S3GW1 | 2014-S3GW2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | | | | | | | | |
| Sample Date | | | | | | | | | | | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Ethyl tertiary-butyl ether | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Ethylbenzene | mg/kg | 40 | 1000 | 40 | 500 | 500 | 40 | 1000 | 1000 | 40 | 1000 |
| Hexachlorobutadiene | mg/kg | 30 | 100 | 30 | 30 | 30 | 90 | 90 | 90 | 100 | 100 |
| Isopropylbenzene | mg/kg | 1000 | 10000 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| Methyl tert-Butyl Ether | mg/kg | 0.1 | 100 | 0.1 | 100 | 100 | 0.1 | 100 | 500 | 0.1 | 100 |
| Methylene Chloride | mg/kg | 0.1 | 4 | 0.1 | 4 | 400 | 0.1 | 20 | 900 | 0.1 | 4 |
| Naphthalene | mg/kg | 4 | 20 | 4 | 20 | 500 | 4 | 40 | 1000 | 4 | 20 |
| n-Butylbenzene | mg/kg | 100 | 500 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| n-Propylbenzene | mg/kg | 100 | 1000 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| sec-Butylbenzene | mg/kg | 100 | 500 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| Styrene | mg/kg | 3 | 4 | 3 | 4 | 70 | 3 | 4 | 200 | 3 | 4 |
| tert-Butylbenzene | mg/kg | 100 | 1000 | 100 | 100 | 100 | 300 | 500 | 500 | 300 | 500 |
| Tertiary-amyl methyl ether | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Tetrachloroethene | mg/kg | 1 | 10 | 1 | 10 | 30 | 1 | 10 | 200 | 1 | 10 |
| Tetrahydrofuran | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Toluene | mg/kg | 30 | 1000 | 30 | 500 | 500 | 30 | 1000 | 1000 | 30 | 2000 |
| trans-1,2-Dichloroethene | mg/kg | 1 | 1 | 1 | 1 | 500 | 1 | 1 | 1000 | 1 | 1 |
| trans-1,3-Dichloropropene | mg/kg | **0.01** | 0.1 | **0.01** | 0.4 | 20 | **0.01** | 0.4 | 70 | **0.01** | 0.4 |
| Trichloroethene | mg/kg | 0.3 | 0.3 | 0.3 | 0.3 | 30 | 0.3 | 2 | 700 | 0.3 | 0.3 |
| Trichlorofluoromethane | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Vinyl Chloride | mg/kg | 0.7 | 0.7 | 0.9 | 0.7 | 1 | 0.9 | 0.7 | 4 | 0.9 | 0.7 |
| Xylene O | mg/kg | 100 | 100 | 400 | 100 | 500 | 400 | 300 | 1000 | 400 | 100 |
| Xylene P,M | mg/kg | 100 | 100 | 400 | 100 | 500 | 400 | 300 | 1000 | 400 | 100 |
| Xylenes (Total) | mg/kg | 100 | 100 | 400 | 100 | 500 | 400 | 300 | 1000 | 400 | 100 |
| **SVOCs** | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | 6 | 2 | 6 | 700 | 2 | 70 | 900 | 2 | 6 |
| 1,2-Dichlorobenzene | mg/kg | 9 | 100 | 9 | 100 | 300 | 9 | 30 | 300 | 9 | 100 |
| 1,3-Dichlorobenzene | mg/kg | 3 | 200 | 3 | 100 | 100 | 1 | 40 | 500 | 3 | 200 |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | 1 | 0.7 | 1 | 80 | 0.7 | 4 | 300 | 0.7 | 1 |
| 2,4,5-Trichlorophenol | mg/kg | 4 | 600 | 4 | 1000 | 600 | 4 | 1000 | 600 | 4 | 100 |
| 2,4,6-Trichlorophenol | mg/kg | 0.7 | 20 | 0.7 | 20 | 20 | 0.7 | 20 | 20 | 0.7 | 20 |
| 2,4-Dichlorophenol | mg/kg | 0.7 | 40 | 0.7 | 60 | 40 | 0.7 | 60 | 40 | 0.7 | 60 |
| 2,4-Dimethylphenol | mg/kg | 0.7 | 100 | 0.7 | 100 | 500 | 0.7 | 100 | 1000 | 0.7 | 100 |
| 2,4-Dinitrophenol | mg/kg | 3 | 50 | 3 | 50 | 50 | 3 | 50 | 90 | 3 | 50 |
| 2,4-Dinitrotoluene | mg/kg | 0.7 | 10 | 0.7 | 2 | 2 | 0.7 | 10 | 10 | 0.7 | 50 |
| 2,6-Dinitrotoluene | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2-Chloronaphthalene | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2-Chlorophenol | mg/kg | 0.7 | 100 | 0.7 | 100 | 100 | 0.7 | 100 | 300 | 0.7 | 100 |
| 2-Methylnaphthalene | mg/kg | 0.7 | 80 | 0.7 | 80 | 300 | 0.7 | 80 | 500 | 1 | 80 |
| 2-Methylphenol | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2-Nitrophenol | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 3,3´-Dichlorobenzidine | mg/kg | 3 | 20 | 3 | 3 | 3 | 10 | 10 | 10 | 100 | 100 |
| 3+4-Methylphenol | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 4-Bromophenyl-phenylether | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 4-Chloroaniline | mg/kg | 1 | 3 | 1 | 7 | 3 | 1 | 100 | 3 | 1 | 40 |
| 4-Nitrophenol | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Acenaphthene | mg/kg | 4 | 3000 | 4 | 1000 | 1000 | 4 | 3000 | 3000 | 4 | 5000 |
| Acenaphthylene | mg/kg | 1 | 10 | 1 | 600 | 10 | 1 | 600 | 10 | 1 | 600 |
| Acetophenone | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-RCS2 | 2014-S1GW1 | 2014-S1GW2 | 2014-S1GW3 | 2014-S2GW1 | 2014-S2GW2 | 2014-S2GW3 | 2014-S3GW1 | 2014-S3GW2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | | | | | | | | |
| Sample Date | | | | | | | | | | | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Aniline | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Anthracene | mg/kg | 1000 | 3000 | 1000 | 1000 | 1000 | 3000 | 3000 | 3000 | 5000 | 5000 |
| Azobenzene | mg/kg | 50 | 500 | NE | NE | NE | NE | NE | NE | NE | NE |
| Benzo(a)anthracene | mg/kg | 7 | 40 | 7 | 7 | 7 | 40 | 40 | 40 | 300 | 300 |
| Benzo(a)pyrene | mg/kg | 2 | 7 | 2 | 2 | 2 | 4 | 4 | 4 | 30 | 30 |
| Benzo(b)fluoranthene | mg/kg | 7 | 40 | 7 | 7 | 7 | 40 | 40 | 40 | 300 | 300 |
| Benzo(g,h,i)perylene | mg/kg | 1000 | 3000 | 1000 | 1000 | 1000 | 3000 | 3000 | 3000 | 5000 | 5000 |
| Benzo(k)fluoranthene | mg/kg | 70 | 400 | 70 | 70 | 70 | 400 | 400 | 400 | 3000 | 3000 |
| bis(2-Chloroethoxy)methane | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| bis(2-Chloroethyl)ether | mg/kg | 0.7 | 0.7 | 0.7 | 0.7 | 2 | 0.7 | 0.7 | 3 | 0.7 | 0.7 |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.7 | 0.7 | 0.7 | 0.7 | 30 | 0.7 | 0.7 | 50 | 0.7 | 0.7 |
| bis(2-Ethylhexyl)phthalate | mg/kg | **90** | 600 | **90** | **90** | **90** | 700 | 700 | 700 | 2000 | 2000 |
| Butylbenzylphthalate | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Chrysene | mg/kg | 70 | 400 | 70 | 70 | 70 | 400 | 400 | 400 | 3000 | 3000 |
| Dibenzo(a,h)Anthracene | mg/kg | 0.7 | 4 | 0.7 | 0.7 | 0.7 | 4 | 4 | 4 | 30 | 30 |
| Dibenzofuran | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Diethylphthalate | mg/kg | 10 | 200 | 10 | 200 | 300 | 10 | 200 | 300 | 10 | 200 |
| Dimethylphthalate | mg/kg | **0.7** | 50 | **0.7** | 50 | 600 | 30 | 50 | 600 | **0.7** | 50 |
| Di-n-butylphthalate | mg/kg | 50 | 500 | NE | NE | NE | NE | NE | NE | NE | NE |
| Di-n-octylphthalate | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Fluoranthene | mg/kg | 1000 | 3000 | 1000 | 1000 | 1000 | 3000 | 3000 | 3000 | 5000 | 5000 |
| Fluorene | mg/kg | 1000 | 3000 | 1000 | 1000 | 1000 | 3000 | 3000 | 3000 | 5000 | 5000 |
| Hexachlorobenzene | mg/kg | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 5 | 5 | 5 | 0.8 | 0.8 |
| Hexachlorobutadiene | mg/kg | 30 | 100 | 30 | 30 | 30 | 90 | 90 | 90 | 100 | 100 |
| Hexachloroethane | mg/kg | 0.7 | 3 | 0.7 | 3 | 50 | 0.7 | 3 | 100 | 0.7 | 3 |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 7 | 40 | 7 | 7 | 7 | 40 | 40 | 40 | 300 | 300 |
| Isophorone | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Naphthalene | mg/kg | 4 | 20 | 4 | 20 | 500 | 4 | 40 | 1000 | 4 | 20 |
| Nitrobenzene | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| N-Nitrosodimethylamine | mg/kg | 50 | 500 | NE | NE | NE | NE | NE | NE | NE | NE |
| Pentachlorophenol | mg/kg | 3 | 10 | 3 | 3 | 3 | 3 | 70 | 10 | 3 | 70 |
| Phenanthrene | mg/kg | 10 | 1000 | 10 | 500 | 500 | 10 | 1000 | 1000 | 20 | 3000 |
| Phenol | mg/kg | 1 | 20 | 1 | 50 | 20 | 1 | 50 | 20 | 1 | 50 |
| Pyrene | mg/kg | 1000 | 3000 | 1000 | 1000 | 1000 | 3000 | 3000 | 3000 | 5000 | 5000 |
| Pyridine | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| **Total Metals** | | | | | | | | | | | |
| Arsenic | mg/kg | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **20** | **50** | **50** |
| Barium | mg/kg | 1000 | 3000 | 1000 | 1000 | 1000 | 3000 | 3000 | 3000 | 5000 | 5000 |
| Cadmium | mg/kg | 70 | 100 | 70 | 70 | 70 | 30 | 30 | 30 | 100 | 100 |
| Chromium | mg/kg | **100** | 200 | **100** | **100** | **100** | 200 | 200 | 200 | 200 | 200 |
| Lead | mg/kg | **200** | **600** | **200** | **200** | **200** | **300** | **300** | **300** | **600** | **600** |
| Mercury | mg/kg | 20 | 30 | 20 | 20 | 20 | 30 | 30 | 30 | 30 | 30 |
| Selenium | mg/kg | 400 | 700 | 400 | 400 | 400 | 800 | 800 | 800 | 700 | 700 |
| Silver | mg/kg | 100 | 200 | 100 | 100 | 100 | 200 | 200 | 200 | 200 | 200 |
| **Pesticides** | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 8 | 40 | 8 | 8 | 8 | 30 | 30 | 30 | 60 | 60 |
| 4,4´-DDE | mg/kg | 6 | 30 | 6 | 6 | 6 | 20 | 20 | 20 | 60 | 60 |
| 4,4´-DDT | mg/kg | 6 | 30 | 6 | 6 | 6 | 20 | 20 | 20 | 60 | 60 |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-RCS2 | 2014-S1GW1 | 2014-S1GW2 | 2014-S1GW3 | 2014-S2GW1 | 2014-S2GW2 | 2014-S2GW3 | 2014-S3GW1 | 2014-S3GW2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | | | | | | | | |
| Sample Date | | | | | | | | | | | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Aldrin | mg/kg | 0.08 | 0.5 | 0.08 | 0.08 | 0.08 | 0.4 | 0.4 | 0.4 | 3 | 3 |
| alpha-BHC | mg/kg | 50 | 500 | NE | NE | NE | NE | NE | NE | NE | NE |
| alpha-Chlordane | mg/kg | 5 | 30 | 5 | 5 | 5 | 30 | 30 | 30 | 60 | 60 |
| beta-BHC | mg/kg | 10 | 100 | NE | NE | NE | NE | NE | NE | NE | NE |
| Chlordane (Total) | mg/kg | 5 | 30 | 5 | 5 | 5 | 30 | 30 | 30 | 60 | 60 |
| delta-BHC | mg/kg | 10 | 100 | NE | NE | NE | NE | NE | NE | NE | NE |
| Dieldrin | mg/kg | 0.08 | 0.5 | 0.08 | 0.08 | 0.08 | 0.4 | 0.4 | 0.4 | 3 | 3 |
| Endosulfan I | mg/kg | 0.5 | 1 | 0.5 | 300 | 1 | 0.5 | 300 | 1 | 0.5 | 500 |
| Endosulfan II | mg/kg | 0.5 | 1 | 0.5 | 300 | 1 | 0.5 | 300 | 1 | 0.5 | 500 |
| Endosulfan Sulfate | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Endrin | mg/kg | 10 | 20 | 10 | 10 | 10 | 10 | 10 | 10 | 20 | 20 |
| Endrin Ketone | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| gamma-BHC (Lindane) | mg/kg | 0.003 | 0.5 | 0.003 | 1 | 0.5 | 0.003 | 2 | 0.5 | 0.003 | 2 |
| gamma-Chlordane | mg/kg | 5 | 30 | 5 | 5 | 5 | 30 | 30 | 30 | 60 | 60 |
| Heptachlor | mg/kg | 0.3 | 2 | 0.3 | 0.3 | 0.3 | 2 | 2 | 2 | 10 | 10 |
| Heptachlor Epoxide | mg/kg | 0.1 | 0.9 | 0.1 | 0.1 | 0.1 | 0.7 | 0.7 | 0.7 | 1 | 1 |
| Hexachlorobenzene | mg/kg | 0.7 | 0.8 | 0.7 | 0.7 | 0.7 | 5 | 5 | 5 | 0.8 | 0.8 |
| Methoxychlor | mg/kg | 200 | 400 | 200 | 200 | 200 | 300 | 300 | 300 | 400 | 400 |
| Toxaphene | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 1 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 4 | 4 |
| Aroclor 1221 | mg/kg | 1 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 4 | 4 |
| Aroclor 1232 | mg/kg | 1 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 4 | 4 |
| Aroclor 1242 | mg/kg | **1** | **4** | **1** | **1** | **1** | **3** | **3** | **3** | **4** | **4** |
| Aroclor 1248 | mg/kg | 1 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 4 | 4 |
| Aroclor 1254 | mg/kg | **1** | **4** | **1** | **1** | **1** | **3** | **3** | **3** | **4** | **4** |
| Aroclor 1260 | mg/kg | **1** | 4 | **1** | **1** | **1** | 3 | 3 | 3 | 4 | 4 |
| Aroclor 1262 | mg/kg | 1 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 4 | 4 |
| Aroclor 1268 | mg/kg | 1 | 4 | 1 | 1 | 1 | 3 | 3 | 3 | 4 | 4 |
| **Herbicides** | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2,4,5-TP (Silvex) | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2,4-D | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| 2,4-DB | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Dalapon | mg/kg | 1000 | 10000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Dicamba | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| Dichlorprop | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Dinoseb | mg/kg | 500 | 5000 | NE | NE | NE | NE | NE | NE | NE | NE |
| MCPA | mg/kg | 100 | 1000 | NE | NE | NE | NE | NE | NE | NE | NE |
| MCPP | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| **Classical Chemistry** | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Flashpoint | °F | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Percent Moisture | % | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Reactive Cyanide | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Reactive Sulfide | mg/kg | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-RCS2 | 2014-S1GW1 | 2014-S1GW2 | 2014-S1GW3 | 2014-S2GW1 | 2014-S2GW2 | 2014-S2GW3 | 2014-S3GW1 | 2014-S3GW2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | | | | | | | | |
| Sample Date | | | | | | | | | | | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | | | |
| Arsenic | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Barium | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Cadmium | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Chromium | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Lead | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Mercury | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Selenium | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |
| Silver | mg/L | NE | NE | NE | NE | NE | NE | NE | NE | NE | NE |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-S3GW3 | 1709324-01 | | 1709324-02 | | 1709324-03 | | 1709324-04 | | 1709324-05 | | 1709324-06 | | 17093 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | SED-C-50 (0-6_0') | | SED-G-50 (4_8-6_0') | | SED-C-78 (0-3_0') | | SED-G-78 (1_2-1_8') | | SED-C-79 (0-2_6') | | SED-G-79 (1_04-1_56') | | SED-C-2 |
| Sample Date | | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.1 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,1,1-Trichloroethane | mg/kg | 30 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.005** | 400 | --- | --- | **0.0105** | U | --- | --- | 0.0039 | U | --- | --- | 0.0049 | U | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.1 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,1-Dichloroethane | mg/kg | 0.4 | 1000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,1-Dichloroethene | mg/kg | 3 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,1-Dichloropropene | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2,3-Trichloropropane | mg/kg | 100 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | 5000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 1000 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 10 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2-Dibromoethane | mg/kg | 0.1 | 40 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2-Dichlorobenzene | mg/kg | 9 | 300 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2-Dichloroethane | mg/kg | 0.1 | 300 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,2-Dichloropropane | mg/kg | 0.1 | 1000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 10 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,3-Dichlorobenzene | mg/kg | 3 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,3-Dichloropropane | mg/kg | 500 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | 2000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 1,4-Dioxane | mg/kg | **0.2** | 500 | --- | --- | **0.525** | U | --- | --- | 0.196 | U | --- | --- | **0.245** | U | --- |
| 2,2-Dichloropropane | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 2-Butanone | mg/kg | 4 | 400 | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| 2-Chlorotoluene | mg/kg | 100 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 2-Hexanone | mg/kg | 100 | NE | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| 4-Chlorotoluene | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 4-Isopropyltoluene | mg/kg | 100 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.4 | 400 | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Acetone | mg/kg | 6 | 400 | --- | --- | 0.518 | - | --- | --- | 0.0811 | - | --- | --- | 0.115 | - | --- |
| Benzene | mg/kg | 2 | 1000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Bromobenzene | mg/kg | 100 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Bromochloromethane | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Bromodichloromethane | mg/kg | 0.1 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Bromoform | mg/kg | 0.1 | 800 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Bromomethane | mg/kg | 0.5 | 30 | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Carbon Disulfide | mg/kg | 100 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0260 | - | --- |
| Carbon Tetrachloride | mg/kg | 5 | 1000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Chlorobenzene | mg/kg | 1 | 100 | --- | --- | 0.456 | - | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Chloroethane | mg/kg | 100 | NE | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Chloroform | mg/kg | 0.2 | 1000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Chloromethane | mg/kg | 100 | NE | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.1 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.01** | 100 | --- | --- | **0.0263** | U | --- | --- | 0.0098 | U | --- | --- | **0.0122** | U | --- |
| Dibromochloromethane | mg/kg | **0.005** | 500 | --- | --- | **0.0105** | U | --- | --- | 0.0039 | U | --- | --- | 0.0049 | U | --- |
| Dibromomethane | mg/kg | 500 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Dichlorodifluoromethane | mg/kg | 1000 | NE | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Diethyl Ether | mg/kg | 100 | NE | --- | --- | 0.0554 | - | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Di-isopropyl ether | mg/kg | 100 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-S3GW3 | 1709324-01 | | 1709324-02 | | 1709324-03 | | 1709324-04 | | 1709324-05 | | 1709324-06 | | 17093 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | SED-C-50 (0-6_0') | | SED-G-50 (4_8-6_0') | | SED-C-78 (0-3_0') | | SED-G-78 (1_2-1_8') | | SED-C-79 (0-2_6') | | SED-G-79 (1_04-1_56') | | SED-C-2 |
| Sample Date | | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | |
| Ethyl tertiary-butyl ether | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Ethylbenzene | mg/kg | 40 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Hexachlorobutadiene | mg/kg | 30 | 100 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Isopropylbenzene | mg/kg | 1000 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.1 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Methylene Chloride | mg/kg | 0.1 | 700 | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Naphthalene | mg/kg | 4 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| n-Butylbenzene | mg/kg | 100 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| n-Propylbenzene | mg/kg | 100 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| sec-Butylbenzene | mg/kg | 100 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Styrene | mg/kg | 3 | 2000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| tert-Butylbenzene | mg/kg | 100 | 500 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Tetrachloroethene | mg/kg | 1 | 1000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Tetrahydrofuran | mg/kg | 500 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Toluene | mg/kg | 30 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| trans-1,2-Dichloroethene | mg/kg | 1 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.01** | 100 | --- | --- | **0.0263** | U | --- | --- | 0.0098 | U | --- | --- | **0.0122** | U | --- |
| Trichloroethene | mg/kg | 0.3 | 60 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Trichlorofluoromethane | mg/kg | 1000 | NE | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Vinyl Chloride | mg/kg | 0.7 | 60 | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Xylene O | mg/kg | 100 | 3000 | --- | --- | 0.0263 | U | --- | --- | 0.0098 | U | --- | --- | 0.0122 | U | --- |
| Xylene P,M | mg/kg | 100 | 3000 | --- | --- | 0.0525 | U | --- | --- | 0.0196 | U | --- | --- | 0.0245 | U | --- |
| Xylenes (Total) | mg/kg | 100 | 3000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 1,2-Dichlorobenzene | mg/kg | 9 | 300 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 1,3-Dichlorobenzene | mg/kg | 3 | 500 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 0.528 | U | --- | --- | 0.828 |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | 2000 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2,4,5-Trichlorophenol | mg/kg | 4 | 200 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 2,4,6-Trichlorophenol | mg/kg | 0.7 | 20 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2,4-Dichlorophenol | mg/kg | 0.7 | 40 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2,4-Dimethylphenol | mg/kg | 0.7 | 1000 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2,4-Dinitrophenol | mg/kg | 3 | 100 | 1.87 | U | --- | --- | 1.76 | U | --- | --- | 2.11 | U | --- | --- | 1.66 |
| 2,4-Dinitrotoluene | mg/kg | 0.7 | 80 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2,6-Dinitrotoluene | mg/kg | 100 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 2-Chloronaphthalene | mg/kg | 1000 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 2-Chlorophenol | mg/kg | 0.7 | 300 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2-Methylnaphthalene | mg/kg | 0.7 | 500 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 2-Methylphenol | mg/kg | 500 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 2-Nitrophenol | mg/kg | 100 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 3,3´-Dichlorobenzidine | mg/kg | 3 | 100 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 3+4-Methylphenol | mg/kg | 500 | NE | 1.87 | U | --- | --- | 1.76 | U | --- | --- | 2.11 | U | --- | --- | 1.66 |
| 4-Bromophenyl-phenylether | mg/kg | 100 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| 4-Chloroaniline | mg/kg | 1 | 3 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| 4-Nitrophenol | mg/kg | 100 | NE | 4.69 | U | --- | --- | 4.41 | U | --- | --- | 5.28 | U | --- | --- | 4.15 |
| Acenaphthene | mg/kg | 4 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Acenaphthylene | mg/kg | 1 | 10 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 0.528 | U | --- | --- | 0.828 |
| Acetophenone | mg/kg | 1000 | NE | 1.87 | U | --- | --- | 1.76 | U | --- | --- | 2.11 | U | --- | --- | 1.66 |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-S3GW3 | 1709324-01 | | 1709324-02 | | 1709324-03 | | 1709324-04 | | 1709324-05 | | 1709324-06 | | 17093 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | SED-C-50 (0-6_0') | | SED-G-50 (4_8-6_0') | | SED-C-78 (0-3_0') | | SED-G-78 (1_2-1_8') | | SED-C-79 (0-2_6') | | SED-G-79 (1_04-1_56') | | SED-C-2 |
| Sample Date | | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | |
| Aniline | mg/kg | 1000 | NE | 4.69 | U | --- | --- | 4.41 | U | --- | --- | 5.28 | U | --- | --- | 4.15 |
| Anthracene | mg/kg | 1000 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Azobenzene | mg/kg | 50 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Benzo(a)anthracene | mg/kg | 7 | 300 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Benzo(a)pyrene | mg/kg | 2 | 30 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| Benzo(b)fluoranthene | mg/kg | 7 | 300 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Benzo(g,h,i)perylene | mg/kg | 1000 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Benzo(k)fluoranthene | mg/kg | 70 | 3000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| bis(2-Chloroethoxy)methane | mg/kg | 500 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| bis(2-Chloroethyl)ether | mg/kg | 0.7 | 80 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.7 | 1000 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| bis(2-Ethylhexyl)phthalate | mg/kg | **90** | 2000 | **133** | D | --- | --- | 21.9 | - | --- | --- | **171** | D | --- | --- | **149** |
| Butylbenzylphthalate | mg/kg | 100 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Chrysene | mg/kg | 70 | 3000 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| Dibenzo(a,h)Anthracene | mg/kg | 0.7 | 30 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| Dibenzofuran | mg/kg | 100 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Diethylphthalate | mg/kg | 10 | 300 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Dimethylphthalate | mg/kg | **0.7** | 600 | **0.935** | U | --- | --- | **0.88** | U | --- | --- | **1.05** | U | --- | --- | **0.828** |
| Di-n-butylphthalate | mg/kg | 50 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Di-n-octylphthalate | mg/kg | 1000 | NE | 37.7 | D | --- | --- | 2.08 | - | --- | --- | 49.7 | D | --- | --- | 8.97 |
| Fluoranthene | mg/kg | 1000 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Fluorene | mg/kg | 1000 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Hexachlorobenzene | mg/kg | 0.7 | 0.8 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| Hexachlorobutadiene | mg/kg | 30 | 100 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Hexachloroethane | mg/kg | 0.7 | 200 | 0.469 | U | --- | --- | 0.441 | U | --- | --- | 0.528 | U | --- | --- | 0.415 |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 7 | 300 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Isophorone | mg/kg | 100 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Naphthalene | mg/kg | 4 | 3000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Nitrobenzene | mg/kg | 500 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| N-Nitrosodimethylamine | mg/kg | 50 | NE | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Pentachlorophenol | mg/kg | 3 | 10 | 1.87 | U | --- | --- | 1.76 | U | --- | --- | 2.11 | U | --- | --- | 1.66 |
| Phenanthrene | mg/kg | 10 | 3000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Phenol | mg/kg | 1 | 20 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 0.528 | U | --- | --- | 0.828 |
| Pyrene | mg/kg | 1000 | 5000 | 0.935 | U | --- | --- | 0.88 | U | --- | --- | 1.05 | U | --- | --- | 0.828 |
| Pyridine | mg/kg | NE | NE | 4.69 | U | --- | --- | 4.41 | U | --- | --- | 5.28 | U | --- | --- | 4.15 |
| | | | | | | | | | | | | | | | | |
| **Total Metals** | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **20** | **50** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | 1000 | 5000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | 70 | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | **100** | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | **200** | **600** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | 20 | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | 400 | 700 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | 100 | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | |
| **Pesticides** | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 8 | 60 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| 4,4´-DDE | mg/kg | 6 | 60 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| 4,4´-DDT | mg/kg | 6 | 60 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-S3GW3 | 1709324-01 | | 1709324-02 | | 1709324-03 | | 1709324-04 | | 1709324-05 | | 1709324-06 | | 17093 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | SED-C-50 (0-6_0') | | SED-G-50 (4_8-6_0') | | SED-C-78 (0-3_0') | | SED-G-78 (1_2-1_8') | | SED-C-79 (0-2_6') | | SED-G-79 (1_04-1_56') | | SED-C-2 |
| Sample Date | | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | |
| Aldrin | mg/kg | 0.08 | 3 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| alpha-BHC | mg/kg | 50 | NE | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| alpha-Chlordane | mg/kg | 5 | 60 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| beta-BHC | mg/kg | 10 | NE | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Chlordane (Total) | mg/kg | 5 | 60 | 0.0572 | U | --- | --- | 0.0539 | U | --- | --- | 0.0623 | U | --- | --- | 0.0511 |
| delta-BHC | mg/kg | 10 | NE | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Dieldrin | mg/kg | 0.08 | 3 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Endosulfan I | mg/kg | 0.5 | 1 | 0.0126 | LC, P | --- | --- | 0.0067 | U | --- | --- | 0.0185 | LC, P | --- | --- | 0.0064 |
| Endosulfan II | mg/kg | 0.5 | 1 | 0.0077 | LC, P | --- | --- | 0.0067 | U | --- | --- | 0.0103 | LC, P | --- | --- | 0.0064 |
| Endosulfan Sulfate | mg/kg | NE | NE | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Endrin | mg/kg | 10 | 20 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Endrin Ketone | mg/kg | NE | NE | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| gamma-BHC (Lindane) | mg/kg | 0.003 | 0.5 | 0.0014 | U | --- | --- | 0.0013 | U | --- | --- | 0.0016 | U | --- | --- | 0.0013 |
| gamma-Chlordane | mg/kg | 5 | 60 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Heptachlor | mg/kg | 0.3 | 10 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Heptachlor Epoxide | mg/kg | 0.1 | 1 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Hexachlorobenzene | mg/kg | 0.7 | 0.8 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0129 |
| Methoxychlor | mg/kg | 200 | 400 | 0.0071 | U | --- | --- | 0.0067 | U | --- | --- | 0.0078 | U | --- | --- | 0.0064 |
| Toxaphene | mg/kg | NE | NE | 0.357 | U | --- | --- | 0.337 | U | --- | --- | 0.389 | U | --- | --- | 0.32 |
| **PCBs** | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 1 | 4 | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 |
| Aroclor 1221 | mg/kg | 1 | 4 | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 |
| Aroclor 1232 | mg/kg | 1 | 4 | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 |
| Aroclor 1242 | mg/kg | **1** | **4** | **4.9** | D | --- | --- | 0.6 | - | --- | --- | **2.2** | - | --- | --- | 0.4 |
| Aroclor 1248 | mg/kg | 1 | 4 | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 |
| Aroclor 1254 | mg/kg | **1** | **4** | **5.3** | D | --- | --- | 1.0 | - | --- | --- | **2.3** | - | --- | --- | 0.8 |
| Aroclor 1260 | mg/kg | **1** | 4 | **1.6** | P, D | --- | --- | 0.3 | - | --- | --- | 0.5 | - | --- | --- | 0.2 |
| Aroclor 1262 | mg/kg | 1 | 4 | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 |
| Aroclor 1268 | mg/kg | 1 | 4 | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 |
| **Herbicides** | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 100 | NE | 5.51 | U, D | --- | --- | 0.051 | U | --- | --- | 0.273 | U, D | --- | --- | 0.244 |
| 2,4,5-TP (Silvex) | mg/kg | 100 | NE | 5.51 | U, D | --- | --- | 0.276 | LC, P | --- | --- | 0.273 | U, D | --- | --- | 0.244 |
| 2,4-D | mg/kg | 100 | NE | 27.3 | U, D | --- | --- | 0.470 | - | --- | --- | 1.35 | U, D | --- | --- | 1.21 |
| 2,4-DB | mg/kg | 100 | NE | 27.6 | U, D | --- | --- | 0.256 | U | --- | --- | 1.36 | U, D | --- | --- | 1.22 |
| Dalapon | mg/kg | 1000 | NE | 26.4 | U, D | --- | --- | 0.245 | U | --- | --- | 1.31 | U, D | --- | --- | 1.17 |
| Dicamba | mg/kg | 500 | NE | 5.45 | U, D | --- | --- | 0.259 | LC, P | --- | --- | 0.27 | U, D | --- | --- | 0.242 |
| Dichlorprop | mg/kg | NE | NE | 27.3 | U, D | --- | --- | 1.55 | - | --- | --- | 2.26 | LC, P, D | --- | --- | 1.91 |
| Dinoseb | mg/kg | 500 | NE | 27.6 | U, D | --- | --- | 0.362 | LC, P | --- | --- | 1.36 | U, D | --- | --- | 1.22 |
| MCPA | mg/kg | 100 | NE | 67.4 | # | --- | --- | 12.5 | U | --- | --- | 66.8 | U, D | --- | --- | 59.7 |
| MCPP | mg/kg | NE | NE | 68.2 | # | --- | --- | 12.7 | # | --- | --- | 67.5 | # | --- | --- | 60.4 |
| **Classical Chemistry** | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | NE | 7.67 | - | --- | --- | 7.75 | - | --- | --- | 8.08 | - | --- | --- | 7.97 |
| Flashpoint | °F | NE | NE | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 |
| Percent Moisture | % | NE | NE | 66 | - | --- | --- | 64 | - | --- | --- | 68 | - | --- | --- | 61 |
| Reactive Cyanide | mg/kg | NE | NE | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 |
| Reactive Sulfide | mg/kg | NE | NE | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 |

| Laboratory Sample Designation | | 2014-RCS1 | 2014-S3GW3 | 1709324-01 | | 1709324-02 | | 1709324-03 | | 1709324-04 | | 1709324-05 | | 1709324-06 | | 17093 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | | SED-C-50 (0-6_0') | | SED-G-50 (4_8-6_0') | | SED-C-78 (0-3_0') | | SED-G-78 (1_2-1_8') | | SED-C-79 (0-2_6') | | SED-G-79 (1_04-1_56') | | SED-C-2 |
| Sample Date | | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | NE | NE | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 |
| Barium | mg/L | NE | NE | 0.116 | - | --- | --- | 0.079 | - | --- | --- | 0.102 | - | --- | --- | 0.142 |
| Cadmium | mg/L | NE | NE | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 |
| Chromium | mg/L | NE | NE | 0.024 | - | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 |
| Lead | mg/L | NE | NE | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 |
| Mercury | mg/L | NE | NE | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0025 |
| Selenium | mg/L | NE | NE | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 |
| Silver | mg/L | NE | NE | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 |

| Laboratory Sample Designation | | 2014-RCS1 | 24-07 | 1709324-08 | | 1709324-09 | | 1709324-10 | | 1709324-11 | | 1709324-12 | | 1709324-13 | | 1709324-14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | 7 (0-5_6') | SED-G-27 (0-1_12') | | SED-C-26 (0-6_0') | | SED-G-26 (1_2-2_4') | | SED-C-52 (0-6_3') | | SED-G-52 (5_04-6_3') | | SED-C-56 (0-5_2') | | SED-G-56 (4_16-5_2') | |
| Sample Date | | | /2017 | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,1,1-Trichloroethane | mg/kg | 30 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.005** | --- | 0.004 | U | --- | --- | 0.004 | U | --- | --- | **0.0072** | U | --- | --- | **0.0083** | U |
| 1,1,2-Trichloroethane | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,1-Dichloroethane | mg/kg | 0.4 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,1-Dichloroethene | mg/kg | 3 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,1-Dichloropropene | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2,3-Trichloropropane | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2,4-Trimethylbenzene | mg/kg | 1000 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 10 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2-Dibromoethane | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2-Dichlorobenzene | mg/kg | 9 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2-Dichloroethane | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,2-Dichloropropane | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,3,5-Trimethylbenzene | mg/kg | 10 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,3-Dichlorobenzene | mg/kg | 3 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,3-Dichloropropane | mg/kg | 500 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 1,4-Dioxane | mg/kg | **0.2** | --- | **0.201** | U | --- | --- | 0.199 | U | --- | --- | **0.362** | U | --- | --- | **0.413** | U |
| 2,2-Dichloropropane | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 2-Butanone | mg/kg | 4 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| 2-Chlorotoluene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 2-Hexanone | mg/kg | 100 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| 4-Chlorotoluene | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 4-Isopropyltoluene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| 4-Methyl-2-Pentanone | mg/kg | 0.4 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Acetone | mg/kg | 6 | --- | 0.120 | - | --- | --- | 0.0557 | - | --- | --- | 0.0757 | - | --- | --- | 0.104 | - |
| Benzene | mg/kg | 2 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Bromobenzene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Bromochloromethane | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Bromodichloromethane | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Bromoform | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Bromomethane | mg/kg | 0.5 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Carbon Disulfide | mg/kg | 100 | --- | 0.0290 | - | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Carbon Tetrachloride | mg/kg | 5 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Chlorobenzene | mg/kg | 1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Chloroethane | mg/kg | 100 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Chloroform | mg/kg | 0.2 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Chloromethane | mg/kg | 100 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| cis-1,2-Dichloroethene | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| cis-1,3-Dichloropropene | mg/kg | **0.01** | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | **0.0181** | U | --- | --- | **0.0207** | U |
| Dibromochloromethane | mg/kg | **0.005** | --- | 0.004 | U | --- | --- | 0.004 | U | --- | --- | **0.0072** | U | --- | --- | **0.0083** | U |
| Dibromomethane | mg/kg | 500 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Dichlorodifluoromethane | mg/kg | 1000 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Diethyl Ether | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0467 | - | --- | --- | 0.0777 | - |
| Di-isopropyl ether | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |

| Laboratory Sample Designation | | 2014-RCS1 | 24-07 | 1709324-08 | | 1709324-09 | | 1709324-10 | | 1709324-11 | | 1709324-12 | | 1709324-13 | | 1709324-14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | 7 (0-5_6') | SED-G-27 (0-1_12') | | SED-C-26 (0-6_0') | | SED-G-26 (1_2-2_4') | | SED-C-52 (0-6_3') | | SED-G-52 (5_04-6_3') | | SED-C-56 (0-5_2') | | SED-G-56 (4_16-5_2') | |
| Sample Date | | | /2017 | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Ethylbenzene | mg/kg | 40 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Hexachlorobutadiene | mg/kg | 30 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Isopropylbenzene | mg/kg | 1000 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Methyl tert-Butyl Ether | mg/kg | 0.1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Methylene Chloride | mg/kg | 0.1 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Naphthalene | mg/kg | 4 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| n-Butylbenzene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| n-Propylbenzene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| sec-Butylbenzene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Styrene | mg/kg | 3 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| tert-Butylbenzene | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Tetrachloroethene | mg/kg | 1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Tetrahydrofuran | mg/kg | 500 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Toluene | mg/kg | 30 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| trans-1,2-Dichloroethene | mg/kg | 1 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| trans-1,3-Dichloropropene | mg/kg | **0.01** | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | **0.0181** | U | --- | --- | **0.0207** | U |
| Trichloroethene | mg/kg | 0.3 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Trichlorofluoromethane | mg/kg | 1000 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Vinyl Chloride | mg/kg | 0.7 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Xylene O | mg/kg | 100 | --- | 0.01 | U | --- | --- | 0.0099 | U | --- | --- | 0.0181 | U | --- | --- | 0.0207 | U |
| Xylene P,M | mg/kg | 100 | --- | 0.0201 | U | --- | --- | 0.0199 | U | --- | --- | 0.0362 | U | --- | --- | 0.0413 | U |
| Xylenes (Total) | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 9 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 3 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 4 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 3 | U | --- | --- | 1.62 | U | --- | --- | 1.58 | U | --- | --- | 1.92 | U | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 100 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 2-Chloronaphthalene | mg/kg | 1000 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 2-Chlorophenol | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 2-Methylphenol | mg/kg | 500 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 2-Nitrophenol | mg/kg | 100 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 3 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 3+4-Methylphenol | mg/kg | 500 | U | --- | --- | 1.62 | U | --- | --- | 1.58 | U | --- | --- | 1.92 | U | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 100 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| 4-Chloroaniline | mg/kg | 1 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| 4-Nitrophenol | mg/kg | 100 | U | --- | --- | 4.07 | U | --- | --- | 3.96 | U | --- | --- | 4.8 | U | --- | --- |
| Acenaphthene | mg/kg | 4 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Acenaphthylene | mg/kg | 1 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Acetophenone | mg/kg | 1000 | U | --- | --- | 1.62 | U | --- | --- | 1.58 | U | --- | --- | 1.92 | U | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-07 | 1709324-08 | | 1709324-09 | | 1709324-10 | | 1709324-11 | | 1709324-12 | | 1709324-13 | | 1709324-14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | 7 (0-5_6') | SED-G-27 (0-1_12') | | SED-C-26 (0-6_0') | | SED-G-26 (1_2-2_4') | | SED-C-52 (0-6_3') | | SED-G-52 (5_04-6_3') | | SED-C-56 (0-5_2') | | SED-G-56 (4_16-5_2') | |
| Sample Date | | | /2017 | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Aniline | mg/kg | 1000 | U | --- | --- | 4.07 | U | --- | --- | 3.96 | U | --- | --- | 4.8 | U | --- | --- |
| Anthracene | mg/kg | 1000 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Azobenzene | mg/kg | 50 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Benzo(a)anthracene | mg/kg | 7 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Benzo(a)pyrene | mg/kg | 2 | U | --- | --- | 0.532 | - | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 7 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 1000 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 70 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 500 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | **90** | D | --- | --- | **293** | D | --- | --- | 52.0 | D | --- | --- | **140** | D | --- | --- |
| Butylbenzylphthalate | mg/kg | 100 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Chrysene | mg/kg | 70 | U | --- | --- | 0.641 | - | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| Dibenzofuran | mg/kg | 100 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Diethylphthalate | mg/kg | 10 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Dimethylphthalate | mg/kg | **0.7** | U | --- | --- | **0.811** | U | --- | --- | **0.789** | U | --- | --- | **0.958** | U | --- | --- |
| Di-n-butylphthalate | mg/kg | 50 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Di-n-octylphthalate | mg/kg | 1000 | - | --- | --- | 19.8 | - | --- | --- | 5.64 | - | --- | --- | 39.2 | D | --- | --- |
| Fluoranthene | mg/kg | 1000 | U | --- | --- | 1.53 | - | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Fluorene | mg/kg | 1000 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 30 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Hexachloroethane | mg/kg | 0.7 | U | --- | --- | 0.407 | U | --- | --- | 0.396 | U | --- | --- | 0.48 | U | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 7 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Isophorone | mg/kg | 100 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Naphthalene | mg/kg | 4 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Nitrobenzene | mg/kg | 500 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 50 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Pentachlorophenol | mg/kg | 3 | U | --- | --- | 1.62 | U | --- | --- | 1.58 | U | --- | --- | 1.92 | U | --- | --- |
| Phenanthrene | mg/kg | 10 | U | --- | --- | 0.814 | - | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Phenol | mg/kg | 1 | U | --- | --- | 0.811 | U | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Pyrene | mg/kg | 1000 | U | --- | --- | 1.01 | - | --- | --- | 0.789 | U | --- | --- | 0.958 | U | --- | --- |
| Pyridine | mg/kg | NE | U | --- | --- | 4.07 | U | --- | --- | 3.96 | U | --- | --- | 4.8 | U | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **20** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | 70 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | **200** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | 400 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 8 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| 4,4´-DDE | mg/kg | 6 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| 4,4´-DDT | mg/kg | 6 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-07 | 1709324-08 | | 1709324-09 | | 1709324-10 | | 1709324-11 | | 1709324-12 | | 1709324-13 | | 1709324-14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | 7 (0-5_6') | SED-G-27 (0-1_12') | | SED-C-26 (0-6_0') | | SED-G-26 (1_2-2_4') | | SED-C-52 (0-6_3') | | SED-G-52 (5_04-6_3') | | SED-C-56 (0-5_2') | | SED-G-56 (4_16-5_2') | |
| Sample Date | | | /2017 | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Aldrin | mg/kg | 0.08 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| alpha-BHC | mg/kg | 50 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| alpha-Chlordane | mg/kg | 5 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| beta-BHC | mg/kg | 10 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Chlordane (Total) | mg/kg | 5 | U | --- | --- | 0.0486 | U | --- | --- | 0.0494 | U | --- | --- | 0.0597 | U | --- | --- |
| delta-BHC | mg/kg | 10 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Dieldrin | mg/kg | 0.08 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Endosulfan I | mg/kg | 0.5 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Endosulfan II | mg/kg | 0.5 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0091 | LC, P | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Endrin | mg/kg | 10 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Endrin Ketone | mg/kg | NE | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.003 | U | --- | --- | 0.0012 | U | --- | --- | 0.0012 | U | --- | --- | 0.0015 | U | --- | --- |
| gamma-Chlordane | mg/kg | 5 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Heptachlor | mg/kg | 0.3 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.1 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.7 | LC, P | --- | --- | 0.0093 | LC, P | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Methoxychlor | mg/kg | 200 | U | --- | --- | 0.0061 | U | --- | --- | 0.0062 | U | --- | --- | 0.0075 | U | --- | --- |
| Toxaphene | mg/kg | NE | U | --- | --- | 0.303 | U | --- | --- | 0.309 | U | --- | --- | 0.373 | U | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- |
| Aroclor 1221 | mg/kg | 1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- |
| Aroclor 1232 | mg/kg | 1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- |
| Aroclor 1242 | mg/kg | **1** | - | --- | --- | 0.9 | - | --- | --- | 0.7 | - | --- | --- | **2.6** | P, D | --- | --- |
| Aroclor 1248 | mg/kg | 1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- |
| Aroclor 1254 | mg/kg | **1** | - | --- | --- | **1.4** | - | --- | --- | **1.5** | - | --- | --- | **2.9** | P, D | --- | --- |
| Aroclor 1260 | mg/kg | **1** | - | --- | --- | 0.4 | - | --- | --- | 0.6 | - | --- | --- | **1.1** | P, D | --- | --- |
| Aroclor 1262 | mg/kg | 1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- |
| Aroclor 1268 | mg/kg | 1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 100 | U, D | --- | --- | 0.233 | U, D | --- | --- | 0.242 | U, D | --- | --- | 0.266 | U, D | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 100 | U, D | --- | --- | 0.233 | U, D | --- | --- | 0.242 | U, D | --- | --- | 0.266 | U, D | --- | --- |
| 2,4-D | mg/kg | 100 | U, D | --- | --- | 1.15 | U, D | --- | --- | 1.2 | U, D | --- | --- | 1.32 | U, D | --- | --- |
| 2,4-DB | mg/kg | 100 | U, D | --- | --- | 1.16 | U, D | --- | --- | 1.21 | U, D | --- | --- | 1.33 | U, D | --- | --- |
| Dalapon | mg/kg | 1000 | U, D | --- | --- | 1.12 | U, D | --- | --- | 1.16 | U, D | --- | --- | 1.28 | U, D | --- | --- |
| Dicamba | mg/kg | 500 | LC, P, D | --- | --- | 0.23 | U, D | --- | --- | 0.239 | U, D | --- | --- | 0.264 | U, D | --- | --- |
| Dichlorprop | mg/kg | NE | LC, P, D | --- | --- | 1.15 | U, D | --- | --- | 1.2 | U, D | --- | --- | 1.32 | U, D | --- | --- |
| Dinoseb | mg/kg | 500 | U, D | --- | --- | 1.16 | U, D | --- | --- | 1.21 | U, D | --- | --- | 1.33 | U, D | --- | --- |
| MCPA | mg/kg | 100 | U, D | --- | --- | 57 | U, D | --- | --- | 59.2 | U, D | --- | --- | 65.2 | U, D | --- | --- |
| MCPP | mg/kg | NE | # | --- | --- | 57.6 | # | --- | --- | 59.9 | # | --- | --- | 65.9 | # | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | - | --- | --- | 7.91 | - | --- | --- | 7.57 | - | --- | --- | 7.35 | - | --- | --- |
| Flashpoint | °F | NE | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- |
| Percent Moisture | % | NE | - | --- | --- | 59 | - | --- | --- | 60 | - | --- | --- | 67 | - | --- | --- |
| Reactive Cyanide | mg/kg | NE | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |
| Reactive Sulfide | mg/kg | NE | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-07 | 1709324-08 | | 1709324-09 | | 1709324-10 | | 1709324-11 | | 1709324-12 | | 1709324-13 | | 1709324-14 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | 7 (0-5_6') | SED-G-27 (0-1_12') | | SED-C-26 (0-6_0') | | SED-G-26 (1_2-2_4') | | SED-C-52 (0-6_3') | | SED-G-52 (5_04-6_3') | | SED-C-56 (0-5_2') | | SED-G-56 (4_16-5_2') | |
| Sample Date | | | /2017 | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | NE | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- |
| Barium | mg/L | NE | - | --- | --- | 0.059 | - | --- | --- | 0.110 | - | --- | --- | 0.131 | - | --- | --- |
| Cadmium | mg/L | NE | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |
| Chromium | mg/L | NE | U | --- | --- | 0.024 | - | --- | --- | 0.02 | U | --- | --- | 0.031 | - | --- | --- |
| Lead | mg/L | NE | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- |
| Mercury | mg/L | NE | U, D | --- | --- | 0.0025 | U, D | --- | --- | 0.0025 | U, D | --- | --- | 0.0025 | U, D | --- | --- |
| Selenium | mg/L | NE | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Silver | mg/L | NE | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 1709324-15 | | 1709324-16 | | 1709324-17 | | 1709324-18 | | 1709324-19 | | 1709324-20 | | 1709324-21 | | 1709 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-55 (0-5_9') | | SED-G-55 (4_72-5_9') | | SED-C-64 (0-3_8') | | SED-G-64 (2_28-3_04') | | Trip Blank 2 | | SED-C-50 (0-6_0') - Dried | | SED-C-78 (0-3_0') - Dried | | SED-C-79 (0 |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 30 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.005** | --- | --- | 0.0046 | U | --- | --- | **0.0052** | U | 0.002 | U | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.4 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 3 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 1000 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 10 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 9 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 10 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 3 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 500 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | **0.2** | --- | --- | **0.23** | U | --- | --- | **0.259** | U | 0.1 | U | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 100 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.4 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 6 | --- | --- | 0.120 | - | --- | --- | 0.137 | - | 0.0156 | - | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 2 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | 0.5 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 5 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 100 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 0.2 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 100 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.01** | --- | --- | **0.0115** | U | --- | --- | **0.013** | U | 0.005 | U | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | **0.005** | --- | --- | 0.0046 | U | --- | --- | **0.0052** | U | 0.002 | U | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 500 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 1000 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | 100 | --- | --- | 0.0217 | - | --- | --- | 0.0152 | - | 0.005 | U | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 1709324-15 | | 1709324-16 | | 1709324-17 | | 1709324-18 | | 1709324-19 | | 1709324-20 | | 1709324-21 | | 1709324 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-55 (0-5_9') | | SED-G-55 (4_72-5_9') | | SED-C-64 (0-3_8') | | SED-G-64 (2_28-3_04') | | Trip Blank 2 | | SED-C-50 (0-6_0') - Dried | | SED-C-78 (0-3_0') - Dried | | SED-C-79 (0 |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 40 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 30 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 1000 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | 0.1 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 4 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 3 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 500 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 30 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 1 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.01** | --- | --- | **0.0115** | U | --- | --- | **0.013** | U | 0.005 | U | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 0.3 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | 1000 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 0.7 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 100 | --- | --- | 0.0115 | U | --- | --- | 0.013 | U | 0.005 | U | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 100 | --- | --- | 0.023 | U | --- | --- | 0.0259 | U | 0.01 | U | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | 0.0075 | U | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 9 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 3 | 0.912 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 4 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 3 | 1.83 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 100 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | 1000 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 500 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | 100 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 3 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 500 | 1.83 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 100 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | 1 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | 100 | 4.58 | U | --- | --- | 5.16 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | 4 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | 1 | 0.912 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | 1000 | 1.83 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 1709324-15 | | 1709324-16 | | 1709324-17 | | 1709324-18 | | 1709324-19 | | 1709324-20 | | 1709324-21 | | 1709324 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-55 (0-5_9') | | SED-G-55 (4_72-5_9') | | SED-C-64 (0-3_8') | | SED-G-64 (2_28-3_04') | | Trip Blank 2 | | SED-C-50 (0-6_0') - Dried | | SED-C-78 (0-3_0') - Dried | | SED-C-79 (0 |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Aniline | mg/kg | 1000 | 4.58 | U | --- | --- | 5.16 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | 1000 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | 50 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | 7 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | 2 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 7 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 1000 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 70 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 500 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | **90** | **109** | D | --- | --- | **423** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | 100 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | 70 | 0.458 | - | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | 100 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | 10 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | **0.7** | **0.912** | U | --- | --- | **1.03** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | 50 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | 1000 | 12.3 | - | --- | --- | 43.7 | D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | 1000 | 1.07 | - | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | 1000 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 30 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 0.7 | 0.458 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 7 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | 100 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 4 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 500 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 50 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 3 | 1.83 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | 10 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | 1 | 0.912 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | 1000 | 0.912 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | NE | 4.58 | U | --- | --- | 5.16 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **20** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **115** | - | **88.4** | - | **69.8** |
| Barium | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 74.3 | - | 77.0 | - | 67.5 |
| Cadmium | mg/kg | 70 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.16 | - | 1.86 | - | 1.94 |
| Chromium | mg/kg | **100** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **124** | - | **104** | - | 99.2 |
| Lead | mg/kg | **200** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **487** | - | **302** | - | **296** |
| Mercury | mg/kg | 20 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.78 | D | 1.29 | D | 1.38 |
| Selenium | mg/kg | 400 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 6.76 | D | 3.83 | D | 4.18 |
| Silver | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.86 | - | 1.95 | - | 1.57 |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 8 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | 6 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | 6 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 1709324-15 | | 1709324-16 | | 1709324-17 | | 1709324-18 | | 1709324-19 | | 1709324-20 | | 1709324-21 | | 1709 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-55 (0-5_9') | | SED-G-55 (4_72-5_9') | | SED-C-64 (0-3_8') | | SED-G-64 (2_28-3_04') | | Trip Blank 2 | | SED-C-50 (0-6_0') - Dried | | SED-C-78 (0-3_0') - Dried | | SED-C-79 (0 |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Aldrin | mg/kg | 0.08 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | 50 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | 5 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | 10 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 5 | 0.0549 | U | --- | --- | 0.0636 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | 10 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | 0.08 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | 0.5 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | 0.5 | 0.0069 | U | --- | --- | 0.0086 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 10 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | NE | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.003 | 0.0014 | U | --- | --- | 0.0016 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | 5 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.3 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.1 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.7 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 200 | 0.0069 | U | --- | --- | 0.008 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | NE | 0.343 | U | --- | --- | 0.398 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 1 | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | 1 | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | 1 | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | **1** | 0.7 | - | --- | --- | 0.4 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | 1 | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | **1** | **1.3** | - | --- | --- | 0.8 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | **1** | 0.4 | - | --- | --- | 0.2 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | 1 | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | 1 | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 100 | 0.257 | U, D | --- | --- | 0.293 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 100 | 0.257 | U, D | --- | --- | 0.305 | LC, P, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 100 | 1.27 | U, D | --- | --- | 1.45 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | 100 | 1.28 | U, D | --- | --- | 1.47 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | 1000 | 1.23 | U, D | --- | --- | 1.41 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | 500 | 0.254 | U, D | --- | --- | 0.29 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | NE | 1.27 | U, D | --- | --- | 1.45 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | 500 | 1.28 | U, D | --- | --- | 1.47 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | 100 | 62.9 | U, D | --- | --- | 71.8 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | NE | 63.5 | # | --- | --- | 72.6 | # | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | 7.54 | - | --- | --- | 7.22 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | NE | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | NE | 64 | - | --- | --- | 69 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | NE | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | NE | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 1709324-15 | | 1709324-16 | | 1709324-17 | | 1709324-18 | | 1709324-19 | | 1709324-20 | | 1709324-21 | | 1709 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | SED-C-55 (0-5_9') | | SED-G-55 (4_72-5_9') | | SED-C-64 (0-3_8') | | SED-G-64 (2_28-3_04') | | Trip Blank 2 | | SED-C-50 (0-6_0') - Dried | | SED-C-78 (0-3_0') - Dried | | SED-C-79 (0 |
| Sample Date | | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13 |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | NE | 0.05 | U | --- | --- | 0.109 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | NE | 0.084 | - | --- | --- | 0.098 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | NE | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | NE | 0.024 | - | --- | --- | 0.082 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | NE | 0.05 | U | --- | --- | 0.289 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | NE | 0.0025 | U, D | --- | --- | 0.0025 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | NE | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | NE | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-22 | 1709324-23 | 1709324-24 | 1709324-25 | 1709324-26 | 1709324-27 | 1709324-28 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | -2_6') - Dried | SED-C-27 (0-5_6') - Dried | SED-C-26 (0-6_0') - Dried | SED-C-52 (0-6_3') - Dried | SED-C-56 (0-5_2') - Dried | SED-C-55 (0-5_9') - Dried | SED-C-64 (0-3_8') - Dried |
| Sample Date | | | /2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 |
| Sample Depth | | | | | | | | | |
| Soil Type | | | | | | | | | |
| Group Designation | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 30 | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.005** | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.4 | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 9 | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | **0.2** | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.4 | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 6 | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 2 | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | 0.5 | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 5 | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 0.2 | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.01** | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | **0.005** | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-22 | 1709324-23 | 1709324-24 | 1709324-25 | 1709324-26 | 1709324-27 | 1709324-28 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | -2_6') - Dried | SED-C-27 (0-5_6') - Dried | SED-C-26 (0-6_0') - Dried | SED-C-52 (0-6_3') - Dried | SED-C-56 (0-5_2') - Dried | SED-C-55 (0-5_9') - Dried | SED-C-64 (0-3_8') - Dried | | | | | | |
| Sample Date | | | /2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | | | | | | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Ethyl tertiary-butyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 40 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.01** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 9 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-22 | 1709324-23 | | 1709324-24 | | 1709324-25 | | 1709324-26 | | 1709324-27 | | 1709324-28 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | -2_6') - Dried | SED-C-27 (0-5_6') - Dried | | SED-C-26 (0-6_0') - Dried | | SED-C-52 (0-6_3') - Dried | | SED-C-56 (0-5_2') - Dried | | SED-C-55 (0-5_9') - Dried | | SED-C-64 (0-3_8') - Dried | |
| Sample Date | | | /2017 | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | | 09/13/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Aniline | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | 50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | 7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | 2 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 70 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | **90** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | 70 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | **0.7** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | 50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 4 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **20** | - | **103** | - | **113** | - | **166** | - | **143** | - | **143** | - | **102** | - |
| Barium | mg/kg | 1000 | - | 75.4 | - | 69.8 | - | 95.0 | - | 81.0 | - | 78.7 | - | 59.1 | - |
| Cadmium | mg/kg | 70 | - | 1.99 | - | 2.36 | - | 2.66 | - | 3.71 | - | 3.89 | - | 2.34 | - |
| Chromium | mg/kg | **100** | - | **101** | - | **109** | - | **102** | - | **132** | - | **136** | - | **117** | - |
| Lead | mg/kg | **200** | - | **500** | - | **489** | - | **624** | - | **528** | - | **516** | - | **314** | - |
| Mercury | mg/kg | 20 | D | 2.07 | D | 2.01 | D | 2.87 | D | 2.72 | D | 1.33 | D | 0.997 | D |
| Selenium | mg/kg | 400 | D | 7.90 | D | 6.81 | D | 6.92 | D | 5.94 | D | 5.73 | D | 3.61 | D |
| Silver | mg/kg | 100 | - | 1.66 | - | 1.95 | - | 1.98 | - | 2.87 | - | 2.85 | - | 2.21 | - |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 8 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | 6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | 6 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-22 | 1709324-23 | 1709324-24 | 1709324-25 | 1709324-26 | 1709324-27 | 1709324-28 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | -2_6') - Dried | SED-C-27 (0-5_6') - Dried | SED-C-26 (0-6_0') - Dried | SED-C-52 (0-6_3') - Dried | SED-C-56 (0-5_2') - Dried | SED-C-55 (0-5_9') - Dried | SED-C-64 (0-3_8') - Dried | | | | | | |
| Sample Date | | | /2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | | | | | | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Aldrin | mg/kg | 0.08 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | 50 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | 5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | 0.08 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | 0.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | 0.5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.003 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | 5 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.7 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | **1** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | **1** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | **1** | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | 1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | 1000 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | 500 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | 100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | NE | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 2014-RCS1 | 24-22 | 1709324-23 | 1709324-24 | 1709324-25 | 1709324-26 | 1709324-27 | 1709324-28 |
|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | | -2_6') - Dried | SED-C-27 (0-5_6') - Dried | SED-C-26 (0-6_0') - Dried | SED-C-52 (0-6_3') - Dried | SED-C-56 (0-5_2') - Dried | SED-C-55 (0-5_9') - Dried | SED-C-64 (0-3_8') - Dried |
| Sample Date | | | /2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 | 09/13/2017 |
| Sample Depth | | | | | | | | | |
| Soil Type | | | | | | | | | |
| Group Designation | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | |
| Arsenic | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | NE | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709418-01 | | 1709418-02 | | 1709418-03 | | 1709418-04 | | 1709418-05 | | 1709418-06 | | 1709418-07 | | 1709418-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-20 (1_68-2_1') | | SED-G-13 (1_2-1_8') | | SED-G-21 (1_4-2_1') | | SED-G-19 (1_36-1_7') | | SED-G-DUP-1 | | SED-G-28 (2_36-3_54') | | SED-G-25 (2_8-3_5') | | SED-C-51 (0-5_3') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | 0.0028 | U | **0.0065** | U | 0.0039 | U | 0.0044 | U | 0.0043 | U | **0.0053** | U | **0.0084** | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.213 | - | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 1,4-Dioxane | mg/kg | 0.141 | U | **0.326** | U | 0.196 | U | **0.222** | U | **0.217** | U | **0.267** | U | **0.42** | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 2-Butanone | mg/kg | 0.0141 | U | 0.0343 | - | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0429 | - | 0.042 | U | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.007 | U | 0.0304 | - | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.215 | - | --- | --- |
| 2-Hexanone | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0410 | - | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Acetone | mg/kg | 0.0492 | - | 0.224 | - | 0.118 | - | 0.0563 | - | 0.0629 | - | 0.291 | - | 0.189 | - | --- | --- |
| Benzene | mg/kg | 0.007 | U | 0.0175 | - | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0210 | - | --- | --- |
| Bromobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Bromochloromethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Bromodichloromethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Bromoform | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Bromomethane | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Carbon Disulfide | mg/kg | 0.0251 | - | 0.0417 | - | 0.0227 | - | 0.0143 | - | 0.0109 | U | 0.0146 | - | 0.0445 | - | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Chlorobenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0304 | - | 0.433 | - | --- | --- |
| Chloroethane | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Chloroform | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Chloromethane | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |

| Laboratory Sample Designation | | 1709418-01 | | 1709418-02 | | 1709418-03 | | 1709418-04 | | 1709418-05 | | 1709418-06 | | 1709418-07 | | 1709418-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-20 (1_68-2_1') | | SED-G-13 (1_2-1_8') | | SED-G-21 (1_4-2_1') | | SED-G-19 (1_36-1_7') | | SED-G-DUP-1 | | SED-G-28 (2_36-3_54') | | SED-G-25 (2_8-3_5') | | SED-C-51 (0-5_3') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| cis-1,3-Dichloropropene | mg/kg | 0.007 | U | **0.0163** | U | 0.0098 | U | **0.0111** | U | **0.0109** | U | **0.0133** | U | **0.021** | U | --- | --- |
| Dibromochloromethane | mg/kg | 0.0028 | U | **0.0065** | U | 0.0039 | U | 0.0044 | U | 0.0043 | U | **0.0053** | U | **0.0084** | U | --- | --- |
| Dibromomethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Diethyl Ether | mg/kg | 0.007 | U | 0.0179 | - | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0282 | - | --- | --- |
| Di-isopropyl ether | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Ethylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0298 | - | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Isopropylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Methylene Chloride | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Naphthalene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0280 | - | --- | --- |
| n-Butylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0265 | - | --- | --- |
| n-Propylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| sec-Butylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Styrene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| tert-Butylbenzene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Tetrachloroethene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Tetrahydrofuran | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Toluene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | 0.007 | U | **0.0163** | U | 0.0098 | U | **0.0111** | U | **0.0109** | U | **0.0133** | U | **0.021** | U | --- | --- |
| Trichloroethene | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.021 | U | --- | --- |
| Vinyl Chloride | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Xylene O | mg/kg | 0.007 | U | 0.0163 | U | 0.0098 | U | 0.0111 | U | 0.0109 | U | 0.0133 | U | 0.0540 | - | --- | --- |
| Xylene P,M | mg/kg | 0.0141 | U | 0.0326 | U | 0.0196 | U | 0.0222 | U | 0.0217 | U | 0.0267 | U | 0.042 | U | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.23 | U |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |

| Laboratory Sample Designation | | 1709418-01 | | 1709418-02 | | 1709418-03 | | 1709418-04 | | 1709418-05 | | 1709418-06 | | 1709418-07 | | 1709418-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-20 (1_68-2_1') | | SED-G-13 (1_2-1_8') | | SED-G-21 (1_4-2_1') | | SED-G-19 (1_36-1_7') | | SED-G-DUP-1 | | SED-G-28 (2_36-3_54') | | SED-G-25 (2_8-3_5') | | SED-C-51 (0-5_3') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.79 | - |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.59 | U |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.23 | U |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.59 | U |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **313** | D |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.23 | - |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.12** | U |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 84.0 | D |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.23 | U |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |

| Laboratory Sample Designation | | 1709418-01 | | 1709418-02 | | 1709418-03 | | 1709418-04 | | 1709418-05 | | 1709418-06 | | 1709418-07 | | 1709418-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-20 (1_68-2_1') | | SED-G-13 (1_2-1_8') | | SED-G-21 (1_4-2_1') | | SED-G-19 (1_36-1_7') | | SED-G-DUP-1 | | SED-G-28 (2_36-3_54') | | SED-G-25 (2_8-3_5') | | SED-C-51 (0-5_3') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.559 | U |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.12 | U |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.59 | U |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0326 | LC, P |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.067 | U |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0088 | LC, P |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.005** | U |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0142 | LC, P |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0084 | U |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.419 | U |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 | U |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 | U |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 | U |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **2.1** | D |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 | U |

| Laboratory Sample Designation | | 1709418-01 | | 1709418-02 | | 1709418-03 | | 1709418-04 | | 1709418-05 | | 1709418-06 | | 1709418-07 | | 1709418-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-20 (1_68-2_1') | | SED-G-13 (1_2-1_8') | | SED-G-21 (1_4-2_1') | | SED-G-19 (1_36-1_7') | | SED-G-DUP-1 | | SED-G-28 (2_36-3_54') | | SED-G-25 (2_8-3_5') | | SED-C-51 (0-5_3') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **5.3** | D |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.2** | D |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 | U |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.2 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.066 | U |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.188 | - |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.328 | U |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.331 | U |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.317 | U |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.456 | LC, P |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.430 | LC, P |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.331 | U |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 16.2 | # |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 16.4 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 7.31 | - |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 200 | > |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 71 | - |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2 | U |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 72.1 | - |
| **TCLP Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.05 | U |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.05 | U |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.01 | U |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.02 | U |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.05 | U |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0005 | U |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.25 | U, D |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709418-09 | | 1709418-10 | | 1709418-11 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-51 (2_12-3_18') | | Trip Blank - 2 | | SED-C-51 (0-5_3') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| **VOCs - Low** | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.008** | U | 0.002 | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 1,4-Dioxane | mg/kg | **0.4** | U | 0.1 | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 2-Butanone | mg/kg | 0.0621 | - | 0.01 | U | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 2-Hexanone | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Acetone | mg/kg | 0.463 | - | 0.0126 | - | --- | --- |
| Benzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Bromobenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Bromochloromethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Bromodichloromethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Bromoform | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Bromomethane | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Carbon Disulfide | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Chlorobenzene | mg/kg | 0.100 | - | 0.005 | U | --- | --- |
| Chloroethane | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Chloroform | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Chloromethane | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |

| Laboratory Sample Designation | | 1709418-09 | | 1709418-10 | | 1709418-11 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-51 (2_12-3_18') | | Trip Blank - 2 | | SED-C-51 (0-5_3') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| cis-1,3-Dichloropropene | mg/kg | **0.02** | U | 0.005 | U | --- | --- |
| Dibromochloromethane | mg/kg | **0.008** | U | 0.002 | U | --- | --- |
| Dibromomethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Diethyl Ether | mg/kg | 0.0227 | - | 0.005 | U | --- | --- |
| Di-isopropyl ether | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Ethylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Isopropylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Methylene Chloride | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Naphthalene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| n-Butylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| n-Propylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| sec-Butylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Styrene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| tert-Butylbenzene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Tetrachloroethene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Tetrahydrofuran | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Toluene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.02** | U | 0.005 | U | --- | --- |
| Trichloroethene | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Vinyl Chloride | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Xylene O | mg/kg | 0.02 | U | 0.005 | U | --- | --- |
| Xylene P,M | mg/kg | 0.04 | U | 0.01 | U | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | 0.0075 | U | --- | --- |
| **SVOCs** | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709418-09 | | 1709418-10 | | 1709418-11 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-51 (2_12-3_18') | | Trip Blank - 2 | | SED-C-51 (0-5_3') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709418-09 | | 1709418-10 | | 1709418-11 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-51 (2_12-3_18') | | Trip Blank - 2 | | SED-C-51 (0-5_3') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | **256** | - |
| Barium | mg/kg | --- | --- | --- | --- | 93.1 | - |
| Cadmium | mg/kg | --- | --- | --- | --- | 2.03 | - |
| Chromium | mg/kg | --- | --- | --- | --- | **139** | - |
| Lead | mg/kg | --- | --- | --- | --- | **579** | - |
| Mercury | mg/kg | --- | --- | --- | --- | 4.18 | D |
| Selenium | mg/kg | --- | --- | --- | --- | 21.2 | EL, U, D |
| Silver | mg/kg | --- | --- | --- | --- | 2.91 | - |
| **Pesticides** | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709418-09 | | 1709418-10 | | 1709418-11 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-51 (2_12-3_18') | | Trip Blank - 2 | | SED-C-51 (0-5_3') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | **0.0062** | U | 0.0042 | U | --- | --- | **0.0056** | U | --- | --- | --- | --- | --- | --- | 0.0046 | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0305 | - | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | **0.308** | U | **0.211** | U | --- | --- | **0.28** | U | --- | --- | --- | --- | --- | --- | **0.229** | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 2-Butanone | mg/kg | --- | --- | 0.0732 | - | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| Acetone | mg/kg | --- | --- | 0.457 | - | 0.0948 | - | --- | --- | 0.196 | - | --- | --- | --- | --- | --- | --- | 0.207 | - | --- | --- |
| Benzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0178 | - | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Bromoform | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Bromomethane | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 0.0168 | - | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | 0.409 | - | 0.0106 | U | --- | --- | 0.389 | - | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Chloroethane | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| Chloroform | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0178 | - | --- | --- |
| Chloromethane | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | **0.0154** | U | **0.0106** | U | --- | --- | **0.014** | U | --- | --- | --- | --- | --- | --- | **0.0114** | U | --- | --- |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | **0.0062** | U | 0.0042 | U | --- | --- | **0.0056** | U | --- | --- | --- | --- | --- | --- | 0.0046 | U | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.0308 | - | --- | --- | --- | --- | --- | --- | 0.150 | - | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 0.0198 | - | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.0190 | - | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Styrene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0157 | - | --- | --- |
| Toluene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | **0.0154** | U | **0.0106** | U | --- | --- | **0.014** | U | --- | --- | --- | --- | --- | --- | **0.0114** | U | --- | --- |
| Trichloroethene | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| Xylene O | mg/kg | --- | --- | 0.0154 | U | 0.0106 | U | --- | --- | 0.014 | U | --- | --- | --- | --- | --- | --- | 0.0114 | U | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 0.0308 | U | 0.0211 | U | --- | --- | 0.028 | U | --- | --- | --- | --- | --- | --- | 0.0229 | U | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **222** | U | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **5.55** | U | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **5.55** | U | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 4.66 | - | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **2.22** | U | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.22 | U | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 1,2-Dichlorobenzene | mg/kg | 1.19 | U | --- | --- | --- | --- | **9.16** | - | --- | --- | 2.49 | - | --- | --- | 1.52 | - | --- | --- | 0.862 | U |
| 1,3-Dichlorobenzene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 1,4-Dichlorobenzene | mg/kg | 0.598 | U | --- | --- | --- | --- | **2.74** | - | --- | --- | **0.927** | - | --- | --- | 0.595 | - | --- | --- | 0.432 | U |
| 2,4,5-Trichlorophenol | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 2,4,6-Trichlorophenol | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 2,4-Dichlorophenol | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 2,4-Dimethylphenol | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.564 | - | --- | --- | 0.532 | - | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 2,4-Dinitrophenol | mg/kg | 2.39 | U | --- | --- | --- | --- | 1.87 | U | --- | --- | 1.8 | U | --- | --- | 1.73 | U | --- | --- | 1.73 | U |
| 2,4-Dinitrotoluene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 2,6-Dinitrotoluene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 2-Chloronaphthalene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 2-Chlorophenol | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 2-Methylnaphthalene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 2-Methylphenol | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 2-Nitrophenol | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 3,3´-Dichlorobenzidine | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 3+4-Methylphenol | mg/kg | 4.78 | - | --- | --- | --- | --- | 1.87 | U | --- | --- | 1.8 | U | --- | --- | 1.73 | U | --- | --- | 1.73 | U |
| 4-Bromophenyl-phenylether | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| 4-Chloroaniline | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| 4-Nitrophenol | mg/kg | 5.98 | U | --- | --- | --- | --- | 4.68 | U | --- | --- | 4.51 | U | --- | --- | 4.33 | U | --- | --- | 4.32 | U |
| Acenaphthene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Acenaphthylene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| Acetophenone | mg/kg | 2.39 | U | --- | --- | --- | --- | 1.87 | U | --- | --- | 1.8 | U | --- | --- | 1.73 | U | --- | --- | 1.73 | U |
| Aniline | mg/kg | 5.98 | U | --- | --- | --- | --- | 4.68 | U | --- | --- | 4.51 | U | --- | --- | 4.33 | U | --- | --- | 4.32 | U |
| Anthracene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Azobenzene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Benzo(a)anthracene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 1.88 | - |
| Benzo(a)pyrene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.634 | - | --- | --- | 0.888 | - | --- | --- | 0.703 | - | --- | --- | 1.62 | - |
| Benzo(b)fluoranthene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 1.23 | - | --- | --- | 0.991 | - | --- | --- | 2.08 | - |
| Benzo(g,h,i)perylene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.905 | - |
| Benzo(k)fluoranthene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)methane | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| bis(2-Chloroethyl)ether | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | **348** | D | --- | --- | --- | --- | **234** | D | --- | --- | **266** | D | --- | --- | **159** | D | --- | --- | **94.6** | D |
| Butylbenzylphthalate | mg/kg | 1.19 | U | --- | --- | --- | --- | 3.11 | - | --- | --- | 2.45 | - | --- | --- | 2.82 | - | --- | --- | 0.993 | - |
| Chrysene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.682 | - | --- | --- | 1.00 | - | --- | --- | 0.787 | - | --- | --- | 1.73 | - |
| Dibenzo(a,h)Anthracene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.468 | - |
| Dibenzofuran | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Diethylphthalate | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Dimethylphthalate | mg/kg | **1.19** | U | --- | --- | --- | --- | **0.934** | U | --- | --- | **0.899** | U | --- | --- | **0.863** | U | --- | --- | **0.862** | U |
| Di-n-butylphthalate | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 1.40 | - | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Di-n-octylphthalate | mg/kg | 89.9 | D | --- | --- | --- | --- | 39.4 | D | --- | --- | 65.2 | D | --- | --- | 14.8 | - | --- | --- | 6.02 | - |
| Fluoranthene | mg/kg | 1.19 | U | --- | --- | --- | --- | 1.22 | - | --- | --- | 1.58 | - | --- | --- | 1.47 | - | --- | --- | 3.61 | - |
| Fluorene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Hexachlorobenzene | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| Hexachlorobutadiene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Hexachloroethane | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.864 | - |
| Isophorone | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Naphthalene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 1.99 | - | --- | --- | 3.86 | - |
| Nitrobenzene | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| N-Nitrosodimethylamine | mg/kg | 1.19 | U | --- | --- | --- | --- | 0.934 | U | --- | --- | 0.899 | U | --- | --- | 0.863 | U | --- | --- | 0.862 | U |
| Pentachlorophenol | mg/kg | 2.39 | U | --- | --- | --- | --- | 1.87 | U | --- | --- | 1.8 | U | --- | --- | 1.73 | U | --- | --- | 1.73 | U |
| Phenanthrene | mg/kg | 1.19 | U | --- | --- | --- | --- | 1.04 | - | --- | --- | 1.15 | - | --- | --- | 0.863 | U | --- | --- | 1.87 | - |
| Phenol | mg/kg | 0.598 | U | --- | --- | --- | --- | 0.468 | U | --- | --- | 0.451 | U | --- | --- | 0.433 | U | --- | --- | 0.432 | U |
| Pyrene | mg/kg | 1.19 | U | --- | --- | --- | --- | 1.19 | - | --- | --- | 1.60 | - | --- | --- | 1.30 | - | --- | --- | 3.00 | - |
| Pyridine | mg/kg | 5.98 | U | --- | --- | --- | --- | 4.68 | U | --- | --- | 4.51 | U | --- | --- | 4.33 | U | --- | --- | 4.32 | U |
| | | | | | | | | | | | | | | | | | | | | | |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | | | |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0202 | - | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| 4,4´-DDE | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0289 | LC, P | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| 4,4´-DDT | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Aldrin | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| alpha-BHC | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| alpha-Chlordane | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| beta-BHC | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.0162 | - | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Chlordane (Total) | mg/kg | 0.0743 | U | --- | --- | --- | --- | 0.0572 | U | --- | --- | 0.0559 | U | --- | --- | 0.0522 | U | --- | --- | 0.0514 | U |
| delta-BHC | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Dieldrin | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0211 | - |
| Endosulfan I | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Endosulfan II | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Endosulfan Sulfate | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Endrin | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Endrin Ketone | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| gamma-BHC (Lindane) | mg/kg | **0.0056** | U | --- | --- | --- | --- | **0.0043** | U | --- | --- | **0.0042** | U | --- | --- | **0.0039** | U | --- | --- | **0.0039** | U |
| gamma-Chlordane | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Heptachlor | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Heptachlor Epoxide | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Hexachlorobenzene | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.0077 | LC, P | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Methoxychlor | mg/kg | 0.0093 | U | --- | --- | --- | --- | 0.0072 | U | --- | --- | 0.007 | U | --- | --- | 0.0065 | U | --- | --- | 0.0064 | U |
| Toxaphene | mg/kg | 0.464 | U | --- | --- | --- | --- | 0.358 | U | --- | --- | 0.35 | U | --- | --- | 0.326 | U | --- | --- | 0.321 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.2 | U | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1221 | mg/kg | 0.2 | U | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1232 | mg/kg | 0.2 | U | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1242 | mg/kg | **1.9** | P | --- | --- | --- | --- | 0.7 | LC, P | --- | --- | **1.9** | P | --- | --- | 0.3 | - | --- | --- | 0.7 | - |
| Aroclor 1248 | mg/kg | 0.2 | U | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1254 | mg/kg | **2.6** | P | --- | --- | --- | --- | **1.8** | P | --- | --- | **2.1** | P | --- | --- | 0.4 | - | --- | --- | **1.1** | - |
| Aroclor 1260 | mg/kg | 0.8 | P | --- | --- | --- | --- | 0.7 | - | --- | --- | 0.5 | LC, P | --- | --- | 0.1 | U | --- | --- | 0.3 | LC, P |
| Aroclor 1262 | mg/kg | 0.2 | U | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1268 | mg/kg | 0.2 | U | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.069 | U | --- | --- | --- | --- | 0.054 | U | --- | --- | 0.054 | U | --- | --- | 0.046 | U | --- | --- | 0.047 | U |
| 2,4,5-TP (Silvex) | mg/kg | 0.069 | U | --- | --- | --- | --- | 0.054 | U | --- | --- | 0.094 | LC, P | --- | --- | 0.085 | - | --- | --- | 0.096 | LC, P |
| 2,4-D | mg/kg | 0.341 | U | --- | --- | --- | --- | 0.269 | U | --- | --- | 0.265 | U | --- | --- | 0.228 | U | --- | --- | 0.233 | U |
| 2,4-DB | mg/kg | 0.344 | U | --- | --- | --- | --- | 0.272 | U | --- | --- | 0.268 | U | --- | --- | 0.23 | U | --- | --- | 0.235 | U |
| Dalapon | mg/kg | 0.33 | U | --- | --- | --- | --- | 0.26 | U | --- | --- | 0.257 | U | --- | --- | 0.22 | U | --- | --- | 0.225 | U |
| Dicamba | mg/kg | 0.499 | - | --- | --- | --- | --- | 0.269 | LC, P | --- | --- | 0.329 | LC, P | --- | --- | 0.222 | - | --- | --- | 0.266 | LC, P |
| Dichlorprop | mg/kg | 0.341 | U | --- | --- | --- | --- | 0.269 | U | --- | --- | 0.274 | LC, P | --- | --- | 0.228 | U | --- | --- | 0.262 | LC, P |
| Dinoseb | mg/kg | 0.344 | U | --- | --- | --- | --- | 0.272 | U | --- | --- | 0.268 | U | --- | --- | 0.23 | U | --- | --- | 0.235 | U |
| MCPA | mg/kg | 16.9 | # | --- | --- | --- | --- | 13.3 | U | --- | --- | 13.1 | U | --- | --- | 11.3 | U | --- | --- | 11.5 | U |
| MCPP | mg/kg | 17.0 | # | --- | --- | --- | --- | 13.4 | # | --- | --- | 13.3 | # | --- | --- | 11.4 | # | --- | --- | 11.6 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 7.27 | - | --- | --- | --- | --- | 6.70 | - | --- | --- | 7.15 | - | --- | --- | 6.90 | - | --- | --- | 6.53 | - |
| Flashpoint | °F | 200 | > | --- | --- | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > |
| Percent Moisture | % | 73 | - | --- | --- | --- | --- | 65 | - | --- | --- | 65 | - | --- | --- | 63 | - | --- | --- | 62 | - |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U |

| Laboratory Sample Designation | | 1709419-01 | | 1709419-02 | | 1709419-03 | | 1709419-04 | | 1709419-05 | | 1709419-06 | | 1709419-07 | | 1709419-08 | | 1709419-09 | | 1709419-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-DUP-2 | | SED-G-DUP-2 | | SED-G-48 (2_46-3_28') | | SED-C-54 (0-7_6') | | SED-G-54 (4_56-6_08') | | SED-C-53 (0-6_5') | | SED-G-53 (5_2-6_5') | | SED-C-58 (0-6_5') | | SED-G-58 (5_2-6_5') | | SED-C-59 (0-6_9') | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Reactive Sulfide | mg/kg | 2.6 | - | --- | --- | --- | --- | 2 | U | --- | --- | 122 | - | --- | --- | 45.9 | - | --- | --- | 2 | U |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.05 | U | --- | --- | --- | --- | 0.157 | - | --- | --- | 0.070 | - | --- | --- | 0.135 | - | --- | --- | 0.082 | - |
| Barium | mg/L | 0.05 | U | --- | --- | --- | --- | 0.169 | - | --- | --- | 0.170 | - | --- | --- | 0.196 | - | --- | --- | 0.139 | - |
| Cadmium | mg/L | 0.01 | U | --- | --- | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |
| Chromium | mg/L | 0.02 | U | --- | --- | --- | --- | 0.02 | U | --- | --- | 0.143 | - | --- | --- | 0.02 | U | --- | --- | 0.02 | U |
| Lead | mg/L | 0.05 | U | --- | --- | --- | --- | 0.103 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U |
| Mercury | mg/L | 0.0005 | U | --- | --- | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U |
| Selenium | mg/L | 0.3 | U, D | --- | --- | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.3 | U, D | --- | --- | 0.3 | U, D |
| Silver | mg/L | 0.01 | U | --- | --- | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.0389 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.0209** | - | --- | --- | **0.0072** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.141 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.0216 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.0368 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | **0.362** | U | --- | --- | **0.359** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 0.238 | - | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 0.111 | - | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.0462 | - | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 2.51 | - | --- | --- | 0.221 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 0.0542 | - | --- | --- | 0.0356 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 0.109 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | 0.0232 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | 0.0362 | U | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 0.0391 | - | --- | --- | 0.0362 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 0.0556 | - | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 0.0362 | U | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.0181** | U | --- | --- | **0.018** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | **0.0252** | - | --- | --- | **0.0072** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.0362 | U | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | 0.0999 | - | --- | --- | 0.0681 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | 0.0362 | U | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.0322 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 0.0544 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 0.0203 | - | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.0181** | U | --- | --- | **0.018** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 0.0403 | - | --- | --- | 0.0208 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 0.0362 | U | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 0.0181 | U | --- | --- | 0.018 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 0.0362 | U | --- | --- | 0.0359 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | |
| **VOCs** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 3.20 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.571 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | 1.92 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | 1.92 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | 4.82 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | 1.92 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | 4.82 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | 0.491 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | **301** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | 2.15 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | 0.596 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | **0.961** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | 46.1 | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | 1.08 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | 1.92 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | 0.482 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | 0.961 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | 4.82 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | **264** | - | **148** | - | **143** | - | **231** | - | **232** | - |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | 87.5 | - | 102 | - | 112 | - | 113 | - | 109 | - |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | 1.83 | - | 2.54 | - | 3.11 | - | 2.07 | - | 2.20 | - |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | **114** | - | **116** | - | **113** | - | **104** | - | **106** | - |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | **505** | - | **610** | - | **705** | - | **573** | - | **601** | - |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | 4.10 | D | 3.19 | D | 4.66 | D | 2.55 | D | 3.57 | D |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | 20.6 | EL, U, D | 20.1 | EL, U, D | 19.9 | EL, U, D | 20.3 | EL, U, D | 20.5 | EL, U, D |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | 2.74 | - | 2.21 | - | 3.31 | - | 1.84 | - | 2.09 | - |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| beta-BHC | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | 0.0608 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | 0.0081 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | **0.0046** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | 0.0076 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | 0.38 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | **1.6** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | **3.4** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | **1.1** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | 0.057 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | 0.233 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | 0.28 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | 0.283 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | 0.271 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | 0.392 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | 0.347 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | 0.283 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | 13.9 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | 14.0 | # | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | 6.44 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | 200 | > | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | 67 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | 2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709419-11 | | 1709419-12 | | 1709419-13 | | 1709419-14 | | 1709419-15 | | 1709419-16 | | 1709419-17 | | 1709419-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-59 (5_52-6_9') | | SED-C-57 (0-7_5') | | SED-G-57 (6_0-7_5') | | SED-C-DUP-2 - Dried | | SED-C-54 (0-7_6') - Dried | | SED-C-53 (0-6_5') - Dried | | SED-C-58 (0-6_5') - Dried | | SED-C-59 (0-6_9') - Dried | |
| Sample Date | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | | 09/14/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Reactive Sulfide | mg/kg | --- | --- | 2.3 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | 0.165 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | 0.05 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | 0.02 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | 0.05 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | 0.0005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | 0.15 | U, D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| **VOCs - Low** | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- |
| 2-Butanone | mg/kg | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- |
| 2-Hexanone | mg/kg | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- |
| Acetone | mg/kg | --- | --- |
| Benzene | mg/kg | --- | --- |
| Bromobenzene | mg/kg | --- | --- |
| Bromochloromethane | mg/kg | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- |
| Bromoform | mg/kg | --- | --- |
| Bromomethane | mg/kg | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- |
| Chlorobenzene | mg/kg | --- | --- |
| Chloroethane | mg/kg | --- | --- |
| Chloroform | mg/kg | --- | --- |
| Chloromethane | mg/kg | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| Dibromochloromethane | mg/kg | --- | --- |
| Dibromomethane | mg/kg | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- |
| Diethyl Ether | mg/kg | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- |
| Ethylbenzene | mg/kg | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- |
| Methylene Chloride | mg/kg | --- | --- |
| Naphthalene | mg/kg | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- |
| Styrene | mg/kg | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- |
| Toluene | mg/kg | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- |
| Trichloroethene | mg/kg | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- |
| Xylene O | mg/kg | --- | --- |
| Xylene P,M | mg/kg | --- | --- |
| | | | |
| **VOCs** | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| 1,2-Dichloropropane | mg/kg | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- |
| 2-Butanone | mg/kg | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- |
| 2-Hexanone | mg/kg | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- |
| Acetone | mg/kg | --- | --- |
| Benzene | mg/kg | --- | --- |
| Bromobenzene | mg/kg | --- | --- |
| Bromochloromethane | mg/kg | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- |
| Bromoform | mg/kg | --- | --- |
| Bromomethane | mg/kg | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- |
| Chlorobenzene | mg/kg | --- | --- |
| Chloroethane | mg/kg | --- | --- |
| Chloroform | mg/kg | --- | --- |
| Chloromethane | mg/kg | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- |
| Dibromomethane | mg/kg | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- |
| Diethyl Ether | mg/kg | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- |
| Ethylbenzene | mg/kg | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- |
| Methylene Chloride | mg/kg | --- | --- |
| Naphthalene | mg/kg | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- |
| Styrene | mg/kg | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| Tertiary-amyl methyl ether | mg/kg | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- |
| Toluene | mg/kg | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- |
| Trichloroethene | mg/kg | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- |
| Xylene O | mg/kg | --- | --- |
| Xylene P,M | mg/kg | --- | --- |
| **SVOCs** | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- |
| Acenaphthene | mg/kg | --- | --- |
| Acenaphthylene | mg/kg | --- | --- |
| Acetophenone | mg/kg | --- | --- |
| Aniline | mg/kg | --- | --- |
| Anthracene | mg/kg | --- | --- |
| Azobenzene | mg/kg | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- |
| Chrysene | mg/kg | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- |
| Dibenzofuran | mg/kg | --- | --- |
| Diethylphthalate | mg/kg | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- |
| Fluoranthene | mg/kg | --- | --- |
| Fluorene | mg/kg | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- |
| Hexachloroethane | mg/kg | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- |
| Isophorone | mg/kg | --- | --- |
| Naphthalene | mg/kg | --- | --- |
| Nitrobenzene | mg/kg | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- |
| Phenanthrene | mg/kg | --- | --- |
| Phenol | mg/kg | --- | --- |
| Pyrene | mg/kg | --- | --- |
| Pyridine | mg/kg | --- | --- |
| | | | |
| **Total Metals** | | | |
| Arsenic | mg/kg | **239** | - |
| Barium | mg/kg | 108 | - |
| Cadmium | mg/kg | 2.16 | - |
| Chromium | mg/kg | **103** | - |
| Lead | mg/kg | **615** | - |
| Mercury | mg/kg | 3.42 | D |
| Selenium | mg/kg | 17 | EL, U, D |
| Silver | mg/kg | 2.06 | - |
| | | | |
| **Pesticides** | | | |
| 4,4´-DDD | mg/kg | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- |
| Aldrin | mg/kg | --- | --- |
| alpha-BHC | mg/kg | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| beta-BHC | mg/kg | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- |
| delta-BHC | mg/kg | --- | --- |
| Dieldrin | mg/kg | --- | --- |
| Endosulfan I | mg/kg | --- | --- |
| Endosulfan II | mg/kg | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- |
| Endrin | mg/kg | --- | --- |
| Endrin Ketone | mg/kg | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- |
| Heptachlor | mg/kg | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- |
| Methoxychlor | mg/kg | --- | --- |
| Toxaphene | mg/kg | --- | --- |
| **PCBs** | | | |
| Aroclor 1016 | mg/kg | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- |
| **Herbicides** | | | |
| 2,4,5-T | mg/kg | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- |
| 2,4-D | mg/kg | --- | --- |
| 2,4-DB | mg/kg | --- | --- |
| Dalapon | mg/kg | --- | --- |
| Dicamba | mg/kg | --- | --- |
| Dichlorprop | mg/kg | --- | --- |
| Dinoseb | mg/kg | --- | --- |
| MCPA | mg/kg | --- | --- |
| MCPP | mg/kg | --- | --- |
| **Classical Chemistry** | | | |
| Corrosivity (pH) | S.U. | --- | --- |
| Flashpoint | °F | --- | --- |
| Percent Moisture | % | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- |

| | | | |
|---|---|---|---|
| Laboratory Sample Designation | | 1709419-19 | |
| Sample Designation | | SED-C-57 (0-7_5') - Dried | |
| Sample Date | | 09/14/2017 | |
| Sample Depth | | | |
| Soil Type | | | |
| Group Designation | | | |
| Reactive Sulfide | mg/kg | --- | --- |
| | | | |
| **TCLP Metals** | | | |
| Arsenic | mg/L | --- | --- |
| Barium | mg/L | --- | --- |
| Cadmium | mg/L | --- | --- |
| Chromium | mg/L | --- | --- |
| Lead | mg/L | --- | --- |
| Mercury | mg/L | --- | --- |
| Selenium | mg/L | --- | --- |
| Silver | mg/L | --- | --- |

| Laboratory Sample Designation | | 1709464-01 | | 1709464-02 | | 1709464-03 | | 1709464-04 | | 1709464-05 | | 1709464-06 | | 1709464-07 | | 1709464-08 | | 1709464-09 | | 1709464-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') | | SED-G-2 (1_6-2_0') | | SED-C-4 (0-1_5') | | SED-G-4 (0_3-0_6') | | SED-C-9 (0-1_5') | | SED-G-9 (0_9-1_2') | | SED-C-6 (0-1_4') | | SED-G-6 (0_84-1_12') | | SED-C-8 (0-1_3') | | SED-G-8 (0_52-0_78') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.003 | U | --- | --- | 0.0022 | U | --- | --- | 0.0022 | U | --- | --- | 0.003 | U | --- | --- | 0.0026 | U |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 1,4-Dioxane | mg/kg | --- | --- | 0.152 | U | --- | --- | 0.111 | U | --- | --- | 0.108 | U | --- | --- | 0.152 | U | --- | --- | 0.132 | U |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 2-Butanone | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0109 | - | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 2-Hexanone | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| Acetone | mg/kg | --- | --- | 0.0559 | - | --- | --- | 0.0302 | - | --- | --- | 0.0833 | - | --- | --- | 0.0812 | - | --- | --- | 0.0584 | - |
| Benzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Bromobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Bromochloromethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Bromodichloromethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Bromoform | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Bromomethane | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| Carbon Disulfide | mg/kg | --- | --- | 0.0132 | - | --- | --- | 0.0083 | - | --- | --- | 0.0110 | - | --- | --- | 0.0218 | - | --- | --- | 0.0200 | - |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Chlorobenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Chloroethane | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| Chloroform | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Chloromethane | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |

| Laboratory Sample Designation | | 1709464-01 | | 1709464-02 | | 1709464-03 | | 1709464-04 | | 1709464-05 | | 1709464-06 | | 1709464-07 | | 1709464-08 | | 1709464-09 | | 1709464-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') | | SED-G-2 (1_6-2_0') | | SED-C-4 (0-1_5') | | SED-G-4 (0_3-0_6') | | SED-C-9 (0-1_5') | | SED-G-9 (0_9-1_2') | | SED-C-6 (0-1_4') | | SED-G-6 (0_84-1_12') | | SED-C-8 (0-1_3') | | SED-G-8 (0_52-0_78') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | 0.003 | U | --- | --- | 0.0022 | U | --- | --- | 0.0022 | U | --- | --- | 0.003 | U | --- | --- | 0.0026 | U |
| Dibromomethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| Diethyl Ether | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Ethylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Isopropylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Methylene Chloride | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| Naphthalene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| n-Butylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| n-Propylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Styrene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Tetrachloroethene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Toluene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Trichloroethene | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Vinyl Chloride | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| Xylene O | mg/kg | --- | --- | 0.0076 | U | --- | --- | 0.0055 | U | --- | --- | 0.0054 | U | --- | --- | 0.0076 | U | --- | --- | 0.0066 | U |
| Xylene P,M | mg/kg | --- | --- | 0.0152 | U | --- | --- | 0.0111 | U | --- | --- | 0.0108 | U | --- | --- | 0.0152 | U | --- | --- | 0.0132 | U |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 2.49 | U | --- | --- | 2.44 | U | --- | --- | 2.53 | U | --- | --- | 2.52 | U | --- | --- | 1.2 | U | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2-Chloronaphthalene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2-Chlorophenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 2-Methylphenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |

| Laboratory Sample Designation | | 1709464-01 | | 1709464-02 | | 1709464-03 | | 1709464-04 | | 1709464-05 | | 1709464-06 | | 1709464-07 | | 1709464-08 | | 1709464-09 | | 1709464-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') | | SED-G-2 (1_6-2_0') | | SED-C-4 (0-1_5') | | SED-G-4 (0_3-0_6') | | SED-C-9 (0-1_5') | | SED-G-9 (0_9-1_2') | | SED-C-6 (0-1_4') | | SED-G-6 (0_84-1_12') | | SED-C-8 (0-1_3') | | SED-G-8 (0_52-0_78') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| 2-Nitrophenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.995 | U | --- | --- | 0.976 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 3+4-Methylphenol | mg/kg | 0.995 | U | --- | --- | 0.976 | U | --- | --- | 1.01 | U | --- | --- | 1.01 | U | --- | --- | 1.2 | U | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 4-Chloroaniline | mg/kg | 0.995 | U | --- | --- | 0.976 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| 4-Nitrophenol | mg/kg | 2.49 | U | --- | --- | 2.44 | U | --- | --- | 2.53 | U | --- | --- | 2.52 | U | --- | --- | 3.01 | U | --- | --- |
| Acenaphthene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Acenaphthylene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Acetophenone | mg/kg | 0.995 | U | --- | --- | 0.976 | U | --- | --- | 1.01 | U | --- | --- | 1.01 | U | --- | --- | 1.2 | U | --- | --- |
| Aniline | mg/kg | 2.49 | U | --- | --- | 2.44 | U | --- | --- | 2.53 | U | --- | --- | 2.52 | U | --- | --- | 3.01 | U | --- | --- |
| Anthracene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.531 | - | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Azobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Benzo(a)anthracene | mg/kg | 0.553 | - | --- | --- | 0.516 | - | --- | --- | 1.11 | - | --- | --- | 0.503 | U | --- | --- | 1.02 | - | --- | --- |
| Benzo(a)pyrene | mg/kg | 0.462 | - | --- | --- | 0.406 | - | --- | --- | 1.02 | - | --- | --- | 0.282 | - | --- | --- | 0.891 | - | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 0.557 | - | --- | --- | 0.487 | U | --- | --- | 1.12 | - | --- | --- | 0.503 | U | --- | --- | 0.999 | - | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.903 | - | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | 0.528 | - | --- | --- | 4.06 | - | --- | --- | 2.90 | - | --- | --- | 2.64 | - | --- | --- | 0.601 | U | --- | --- |
| Butylbenzylphthalate | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Chrysene | mg/kg | 0.670 | - | --- | --- | 0.615 | - | --- | --- | 1.16 | - | --- | --- | 0.382 | - | --- | --- | 1.12 | - | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.249 | U | --- | --- | 0.244 | U | --- | --- | 0.265 | - | --- | --- | 0.252 | U | --- | --- | 0.301 | U | --- | --- |
| Dibenzofuran | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Diethylphthalate | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Dimethylphthalate | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Di-n-butylphthalate | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Di-n-octylphthalate | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Fluoranthene | mg/kg | 1.58 | - | --- | --- | 1.46 | - | --- | --- | 3.22 | - | --- | --- | 0.675 | - | --- | --- | 1.61 | - | --- | --- |
| Fluorene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Hexachloroethane | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Isophorone | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Naphthalene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Nitrobenzene | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Pentachlorophenol | mg/kg | 2.49 | U | --- | --- | 2.44 | U | --- | --- | 2.53 | U | --- | --- | 2.52 | U | --- | --- | 1.2 | U | --- | --- |
| Phenanthrene | mg/kg | 0.522 | - | --- | --- | 0.487 | U | --- | --- | 2.11 | - | --- | --- | 0.503 | U | --- | --- | 0.854 | - | --- | --- |
| Phenol | mg/kg | 0.497 | U | --- | --- | 0.487 | U | --- | --- | 0.504 | U | --- | --- | 0.503 | U | --- | --- | 0.601 | U | --- | --- |
| Pyrene | mg/kg | 1.49 | - | --- | --- | 1.45 | - | --- | --- | 2.97 | - | --- | --- | 0.806 | - | --- | --- | 2.08 | - | --- | --- |
| Pyridine | mg/kg | 2.49 | U | --- | --- | 2.44 | U | --- | --- | 2.53 | U | --- | --- | 2.52 | U | --- | --- | 3.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709464-01 | | 1709464-02 | | 1709464-03 | | 1709464-04 | | 1709464-05 | | 1709464-06 | | 1709464-07 | | 1709464-08 | | 1709464-09 | | 1709464-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') | | SED-G-2 (1_6-2_0') | | SED-C-4 (0-1_5') | | SED-G-4 (0_3-0_6') | | SED-C-9 (0-1_5') | | SED-G-9 (0_9-1_2') | | SED-C-6 (0-1_4') | | SED-G-6 (0_84-1_12') | | SED-C-8 (0-1_3') | | SED-G-8 (0_52-0_78') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| 4,4´-DDE | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| 4,4´-DDT | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Aldrin | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| alpha-BHC | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| alpha-Chlordane | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| beta-BHC | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Chlordane (Total) | mg/kg | 0.0303 | U | --- | --- | 0.03 | U | --- | --- | 0.0309 | U | --- | --- | 0.0309 | U | --- | --- | 0.0359 | U | --- | --- |
| delta-BHC | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Dieldrin | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Endosulfan I | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Endosulfan II | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Endrin | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Endrin Ketone | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.0023 | U | --- | --- | 0.0022 | U | --- | --- | 0.0023 | U | --- | --- | 0.0023 | U | --- | --- | 0.0027 | U | --- | --- |
| gamma-Chlordane | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Heptachlor | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Methoxychlor | mg/kg | 0.0038 | U | --- | --- | 0.0037 | U | --- | --- | 0.0039 | U | --- | --- | 0.0039 | U | --- | --- | 0.0045 | U | --- | --- |
| Toxaphene | mg/kg | 0.189 | U | --- | --- | 0.187 | U | --- | --- | 0.193 | U | --- | --- | 0.193 | U | --- | --- | 0.224 | U | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.07 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1221 | mg/kg | 0.07 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1232 | mg/kg | 0.07 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1242 | mg/kg | 0.07 | U | --- | --- | 0.3 | - | --- | --- | 0.2 | - | --- | --- | 0.4 | - | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1248 | mg/kg | 0.07 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1254 | mg/kg | 0.2 | - | --- | --- | 0.5 | - | --- | --- | 0.7 | - | --- | --- | 0.7 | - | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1260 | mg/kg | 0.2 | - | --- | --- | 0.2 | - | --- | --- | 0.3 | - | --- | --- | 0.3 | - | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1262 | mg/kg | 0.07 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.09 | U | --- | --- |
| Aroclor 1268 | mg/kg | 0.07 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.09 | U | --- | --- |

| Laboratory Sample Designation | | 1709464-01 | | 1709464-02 | | 1709464-03 | | 1709464-04 | | 1709464-05 | | 1709464-06 | | 1709464-07 | | 1709464-08 | | 1709464-09 | | 1709464-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') | | SED-G-2 (1_6-2_0') | | SED-C-4 (0-1_5') | | SED-G-4 (0_3-0_6') | | SED-C-9 (0-1_5') | | SED-G-9 (0_9-1_2') | | SED-C-6 (0-1_4') | | SED-G-6 (0_84-1_12') | | SED-C-8 (0-1_3') | | SED-G-8 (0_52-0_78') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.029 | U | --- | --- | 0.142 | U, D | --- | --- | 0.028 | U | --- | --- | 0.029 | U | --- | --- | 0.034 | U | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.029 | U | --- | --- | 0.142 | U, D | --- | --- | 0.028 | U | --- | --- | 0.029 | U | --- | --- | 0.034 | U | --- | --- |
| 2,4-D | mg/kg | 0.141 | U | --- | --- | 0.701 | U, D | --- | --- | 0.14 | U | --- | --- | 0.141 | U | --- | --- | 0.17 | U | --- | --- |
| 2,4-DB | mg/kg | 0.143 | U | --- | --- | 0.708 | U, D | --- | --- | 0.142 | U | --- | --- | 0.143 | U | --- | --- | 0.171 | U | --- | --- |
| Dalapon | mg/kg | 0.137 | U | --- | --- | 0.679 | U, D | --- | --- | 0.136 | U | --- | --- | 0.137 | U | --- | --- | 0.164 | U | --- | --- |
| Dicamba | mg/kg | 0.117 | LC, P | --- | --- | 0.14 | U, D | --- | --- | 0.217 | - | --- | --- | 0.203 | P, D | --- | --- | 0.129 | LC, P | --- | --- |
| Dichlorprop | mg/kg | 0.933 | LC, P | --- | --- | 1.09 | LC, P, D | --- | --- | 0.246 | LC, P | --- | --- | 0.141 | U | --- | --- | 0.17 | U | --- | --- |
| Dinoseb | mg/kg | 0.143 | U | --- | --- | 0.708 | U, D | --- | --- | 0.142 | U | --- | --- | 0.143 | U | --- | --- | 0.171 | U | --- | --- |
| MCPA | mg/kg | 6.98 | U | --- | --- | 34.7 | U, D | --- | --- | 6.95 | U | --- | --- | 6.99 | U | --- | --- | 8.39 | # | --- | --- |
| MCPP | mg/kg | 7.06 | # | --- | --- | 35.0 | # | --- | --- | 7.02 | # | --- | --- | 7.06 | # | --- | --- | 8.48 | # | --- | --- |
| | | | | | | | | | | | | | | | | | | | | | |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 7.65 | - | --- | --- | 7.00 | - | --- | --- | 8.14 | - | --- | --- | 7.26 | - | --- | --- | 7.55 | - | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- |
| Percent Moisture | % | 36 | - | --- | --- | 34 | - | --- | --- | 37 | - | --- | --- | 37 | - | --- | --- | 46 | - | --- | --- |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |
| Reactive Sulfide | mg/kg | 5.0 | - | --- | --- | 2 | U | --- | --- | 17.7 | - | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |
| | | | | | | | | | | | | | | | | | | | | | |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.323 | - | --- | --- | 0.116 | - | --- | --- | 0.05 | U | --- | --- | 0.126 | - | --- | --- | 0.527 | - | --- | --- |
| Barium | mg/L | 0.208 | - | --- | --- | 0.177 | - | --- | --- | 0.210 | - | --- | --- | 0.149 | - | --- | --- | 0.216 | - | --- | --- |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.0168 | - | --- | --- | 0.01 | U | --- | --- | 0.0187 | - | --- | --- | 0.01 | U | --- | --- |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- |
| Lead | mg/L | 0.470 | - | --- | --- | 0.521 | - | --- | --- | 0.181 | - | --- | --- | 0.598 | - | --- | --- | 1.02 | - | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- |
| Selenium | mg/L | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709464-11 | | 1709464-12 | | 1709464-13 | | 1709464-14 | | 1709464-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') - Dried | | SED-C-4 (0-1_5') - Dried | | SED-C-9 (0-1_5') - Dried | | SED-C-6 (0-1_4') - Dried | | SED-C-8 (0-1_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709464-11 | | 1709464-12 | | 1709464-13 | | 1709464-14 | | 1709464-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') - Dried | | SED-C-4 (0-1_5') - Dried | | SED-C-9 (0-1_5') - Dried | | SED-C-6 (0-1_4') - Dried | | SED-C-8 (0-1_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | |
| **SVOCs** | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709464-11 | | 1709464-12 | | 1709464-13 | | 1709464-14 | | 1709464-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') - Dried | | SED-C-4 (0-1_5') - Dried | | SED-C-9 (0-1_5') - Dried | | SED-C-6 (0-1_4') - Dried | | SED-C-8 (0-1_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709464-11 | | 1709464-12 | | 1709464-13 | | 1709464-14 | | 1709464-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') - Dried | | SED-C-4 (0-1_5') - Dried | | SED-C-9 (0-1_5') - Dried | | SED-C-6 (0-1_4') - Dried | | SED-C-8 (0-1_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **Total Metals** | | | | | | | | | | | |
| Arsenic | mg/kg | **141** | - | **81.7** | - | **54.4** | - | **124** | - | **132** | - |
| Barium | mg/kg | 79.2 | - | 82.0 | - | 67.1 | - | 69.2 | - | 68.6 | - |
| Cadmium | mg/kg | 1.42 | - | 1.71 | - | 0.59 | - | 1.25 | - | 0.95 | - |
| Chromium | mg/kg | 44.8 | B | 59.2 | B | 51.9 | B | 52.4 | B | 51.9 | B |
| Lead | mg/kg | **460** | - | **374** | - | **333** | - | **351** | - | **513** | - |
| Mercury | mg/kg | 2.05 | D | 1.65 | D | 0.851 | D | 2.11 | D | 3.43 | D |
| Selenium | mg/kg | 39 | EL, U, D | 49.2 | EL, U, D | 38.2 | EL, U, D | 45.5 | EL, U, D | 46.1 | EL, U, D |
| Silver | mg/kg | 1.21 | - | 1.06 | - | 0.69 | - | 1.02 | - | 0.75 | - |
| | | | | | | | | | | | |
| **Pesticides** | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709464-11 | | 1709464-12 | | 1709464-13 | | 1709464-14 | | 1709464-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-2 (0-2') - Dried | | SED-C-4 (0-1_5') - Dried | | SED-C-9 (0-1_5') - Dried | | SED-C-6 (0-1_4') - Dried | | SED-C-8 (0-1_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **Herbicides** | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.0026 | U | --- | --- | 0.0025 | U | --- | --- | 0.0017 | U | --- | --- | 0.003 | U | --- | --- | **0.0076** | U |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0839 | - |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0188 | - | --- | --- | 1.08 | E |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0449 | - | --- | --- | 0.0189 | U |
| 1,4-Dioxane | mg/kg | --- | --- | 0.132 | U | --- | --- | 0.124 | U | --- | --- | 0.0846 | U | --- | --- | 0.15 | U | --- | --- | **0.379** | U |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 2-Butanone | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.0189 | - | --- | --- | 0.0634 | - |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.490 | - |
| 2-Hexanone | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.113 | - |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| Acetone | mg/kg | --- | --- | 0.0699 | - | --- | --- | 0.0306 | - | --- | --- | 0.0249 | - | --- | --- | 0.207 | - | --- | --- | 0.227 | - |
| Benzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0115 | - | --- | --- | 0.0343 | - |
| Bromobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Bromochloromethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Bromodichloromethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Bromoform | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Bromomethane | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| Carbon Disulfide | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0231 | - | --- | --- | 0.0066 | - | --- | --- | 0.0372 | - | --- | --- | 0.0351 | - |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Chlorobenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | **2.00** | E | --- | --- | 0.0189 | U |
| Chloroethane | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| Chloroform | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Chloromethane | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0199 | - |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | **0.0189** | U |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | 0.0026 | U | --- | --- | 0.0025 | U | --- | --- | 0.0017 | U | --- | --- | 0.003 | U | --- | --- | **0.0076** | U |
| Dibromomethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| Diethyl Ether | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Ethylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.163 | - |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Isopropylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0198 | - |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Methylene Chloride | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| Naphthalene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.140 | - |
| n-Butylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0296 | - |
| n-Propylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Styrene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Tetrachloroethene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Toluene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.113 | - |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | **0.0189** | U |
| Trichloroethene | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0189 | U |
| Vinyl Chloride | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0379 | U |
| Xylene O | mg/kg | --- | --- | 0.0066 | U | --- | --- | 0.0062 | U | --- | --- | 0.0042 | U | --- | --- | 0.0075 | U | --- | --- | 0.0690 | - |
| Xylene P,M | mg/kg | --- | --- | 0.0132 | U | --- | --- | 0.0124 | U | --- | --- | 0.0085 | U | --- | --- | 0.015 | U | --- | --- | 0.0700 | - |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | | | |
| **VOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.18 | U | --- | --- | 6.22 | U |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 4.59 | - |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | **1.24** | U |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.762** | - | --- | --- | **1.24** | U |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **127** | U | --- | --- | **249** | U |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.18 | U | --- | --- | **6.22** | U |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.60 | - |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.18 | U | --- | --- | 6.22 | U |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **3.18** | U | --- | --- | **6.22** | U |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.18 | U | --- | --- | **6.22** | U |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **24.4** | - | --- | --- | **1.24** | U |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **1.27** | U | --- | --- | **2.49** | U |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | **1.24** | U |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.18 | U | --- | --- | 6.22 | U |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | **1.24** | U |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **0.635** | U | --- | --- | **1.24** | U |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | **1.24** | U |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.635 | U | --- | --- | 1.24 | U |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.27 | U | --- | --- | 2.49 | U |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 2.95 | U | --- | --- | 2.58 | U | --- | --- | 2.23 | U | --- | --- | 1.58 | U | --- | --- | 1.88 | U | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 2-Chloronaphthalene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 2-Chlorophenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| 2-Methylphenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 2-Nitrophenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.89 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 3+4-Methylphenol | mg/kg | 1.18 | U | --- | --- | 1.03 | U | --- | --- | 0.89 | U | --- | --- | 1.58 | U | --- | --- | 1.88 | U | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 4-Chloroaniline | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.89 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| 4-Nitrophenol | mg/kg | 2.95 | U | --- | --- | 2.58 | U | --- | --- | 2.23 | U | --- | --- | 3.95 | U | --- | --- | 4.71 | U | --- | --- |
| Acenaphthene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Acenaphthylene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Acetophenone | mg/kg | 1.18 | U | --- | --- | 1.03 | U | --- | --- | 0.89 | U | --- | --- | 1.58 | U | --- | --- | 1.88 | U | --- | --- |
| Aniline | mg/kg | 2.95 | U | --- | --- | 2.58 | U | --- | --- | 2.23 | U | --- | --- | 3.95 | U | --- | --- | 4.71 | U | --- | --- |
| Anthracene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Azobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Benzo(a)anthracene | mg/kg | 0.588 | U | --- | --- | 0.579 | - | --- | --- | 0.559 | - | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Benzo(a)pyrene | mg/kg | 0.393 | - | --- | --- | 0.493 | - | --- | --- | 0.488 | - | --- | --- | 0.483 | - | --- | --- | 0.729 | - | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 0.588 | U | --- | --- | 0.597 | - | --- | --- | 0.507 | - | --- | --- | 0.787 | U | --- | --- | 0.968 | - | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Benzo(k)fluoranthene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | 1.81 | - | --- | --- | 6.91 | - | --- | --- | 2.31 | - | --- | --- | **116** | D | --- | --- | **204** | D | --- | --- |
| Butylbenzylphthalate | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Chrysene | mg/kg | 0.352 | - | --- | --- | 0.659 | - | --- | --- | 0.513 | - | --- | --- | 0.539 | - | --- | --- | 0.822 | - | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.295 | U | --- | --- | 0.258 | U | --- | --- | 0.223 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| Dibenzofuran | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Diethylphthalate | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Dimethylphthalate | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | **0.787** | U | --- | --- | **0.939** | U | --- | --- |
| Di-n-butylphthalate | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Di-n-octylphthalate | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 1.59 | - | --- | --- | 5.91 | - | --- | --- |
| Fluoranthene | mg/kg | 0.588 | U | --- | --- | 0.981 | - | --- | --- | 0.724 | - | --- | --- | 0.806 | - | --- | --- | 1.53 | - | --- | --- |
| Fluorene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Hexachloroethane | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.395 | U | --- | --- | 0.471 | U | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Isophorone | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Naphthalene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Nitrobenzene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Pentachlorophenol | mg/kg | 2.95 | U | --- | --- | 2.58 | U | --- | --- | 2.23 | U | --- | --- | 1.58 | U | --- | --- | 1.88 | U | --- | --- |
| Phenanthrene | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 1.11 | - | --- | --- |
| Phenol | mg/kg | 0.588 | U | --- | --- | 0.514 | U | --- | --- | 0.445 | U | --- | --- | 0.787 | U | --- | --- | 0.939 | U | --- | --- |
| Pyrene | mg/kg | 0.675 | - | --- | --- | 1.21 | - | --- | --- | 0.984 | - | --- | --- | 0.895 | - | --- | --- | 1.45 | - | --- | --- |
| Pyridine | mg/kg | 2.95 | U | --- | --- | 2.58 | U | --- | --- | 2.23 | U | --- | --- | 3.95 | U | --- | --- | 4.71 | U | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0044 | U | --- | --- | 0.0072 | - | --- | --- | 0.0035 | U | --- | --- | 0.0117 | - | --- | --- | 0.0178 | LC, P | --- | --- |
| 4,4´-DDE | mg/kg | 0.0044 | U | --- | --- | 0.0047 | LC, P | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| 4,4´-DDT | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Aldrin | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| alpha-BHC | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| alpha-Chlordane | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| beta-BHC | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Chlordane (Total) | mg/kg | 0.0351 | U | --- | --- | 0.0323 | U | --- | --- | 0.028 | U | --- | --- | 0.0472 | U | --- | --- | 0.0575 | U | --- | --- |
| delta-BHC | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Dieldrin | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0141 | LC, P | --- | --- | 0.0302 | - | --- | --- |
| Endosulfan I | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0084 | - | --- | --- | 0.0072 | U | --- | --- |
| Endosulfan II | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Endrin | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Endrin Ketone | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.0026 | U | --- | --- | 0.0024 | U | --- | --- | 0.0021 | U | --- | --- | **0.0035** | U | --- | --- | **0.0043** | U | --- | --- |
| gamma-Chlordane | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Heptachlor | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Methoxychlor | mg/kg | 0.0044 | U | --- | --- | 0.004 | U | --- | --- | 0.0035 | U | --- | --- | 0.0059 | U | --- | --- | 0.0072 | U | --- | --- |
| Toxaphene | mg/kg | 0.22 | U | --- | --- | 0.202 | U | --- | --- | 0.175 | U | --- | --- | 0.295 | U | --- | --- | 0.36 | U | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1221 | mg/kg | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1232 | mg/kg | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1242 | mg/kg | 0.2 | - | --- | --- | 0.2 | - | --- | --- | 0.2 | - | --- | --- | 0.8 | - | --- | --- | **1.2** | - | --- | --- |
| Aroclor 1248 | mg/kg | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1254 | mg/kg | 0.6 | - | --- | --- | 0.4 | - | --- | --- | 0.3 | - | --- | --- | **1.7** | - | --- | --- | **2.3** | - | --- | --- |
| Aroclor 1260 | mg/kg | 0.3 | - | --- | --- | 0.2 | - | --- | --- | 0.07 | U | --- | --- | 0.5 | - | --- | --- | 0.8 | - | --- | --- |
| Aroclor 1262 | mg/kg | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1268 | mg/kg | 0.09 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.032 | U | --- | --- | 0.147 | U, D | --- | --- | 0.024 | U | --- | --- | 0.046 | U | --- | --- | 0.053 | U | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.032 | U | --- | --- | 0.767 | LC, P, D | --- | --- | 0.024 | U | --- | --- | 0.046 | U | --- | --- | 0.345 | - | --- | --- |
| 2,4-D | mg/kg | 0.157 | U | --- | --- | 0.73 | U, D | --- | --- | 0.117 | U | --- | --- | 0.229 | U | --- | --- | 0.26 | U | --- | --- |
| 2,4-DB | mg/kg | 0.159 | U | --- | --- | 0.737 | U, D | --- | --- | 0.118 | U | --- | --- | 0.232 | U | --- | --- | 0.263 | U | --- | --- |
| Dalapon | mg/kg | 0.152 | U | --- | --- | 0.706 | U, D | --- | --- | 0.113 | U | --- | --- | 0.222 | U | --- | --- | 0.252 | U | --- | --- |
| Dicamba | mg/kg | 0.031 | U | --- | --- | 0.146 | U, D | --- | --- | 0.090 | LC, P | --- | --- | 0.251 | LC, P | --- | --- | 0.634 | LC, P, D | --- | --- |
| Dichlorprop | mg/kg | 0.157 | U | --- | --- | 1.62 | LC, P, D | --- | --- | 0.708 | LC, P | --- | --- | 0.310 | LC, P | --- | --- | 0.616 | LC, P | --- | --- |
| Dinoseb | mg/kg | 0.159 | U | --- | --- | 0.737 | U, D | --- | --- | 0.118 | U | --- | --- | 0.430 | LC, P | --- | --- | 0.294 | LC, P | --- | --- |
| MCPA | mg/kg | 7.76 | U | --- | --- | 36.1 | # | --- | --- | 5.77 | U | --- | --- | 11.4 | U | --- | --- | 12.9 | U | --- | --- |
| MCPP | mg/kg | 7.84 | # | --- | --- | 36.5 | # | --- | --- | 5.83 | # | --- | --- | 11.5 | # | --- | --- | 13.0 | # | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 7.89 | - | --- | --- | 7.47 | - | --- | --- | 7.61 | - | --- | --- | 7.68 | - | --- | --- | 7.44 | - | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- |
| Percent Moisture | % | 46 | - | --- | --- | 38 | - | --- | --- | 29 | - | --- | --- | 59 | - | --- | --- | 65 | - | --- | --- |

| Laboratory Sample Designation | | 1709465-01 | | 1709465-02 | | 1709465-03 | | 1709465-04 | | 1709465-05 | | 1709465-06 | | 1709465-07 | | 1709465-08 | | 1709465-09 | | 1709465-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-11 (0-1_6') | | SED-G-11 (0-0_32') | | SED-C-5 (0-1_6') | | SED-G-5 (1_28-1_6') | | SED-C-7 (0-2_2') | | SED-G-7 (0_88-1_32') | | SED-C-34 (0-8_0') | | SED-G-34 (6_4-8_0') | | SED-C-43 (0-6_6') | | SED-G-43 (5_28-6_6') | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |
| Reactive Sulfide | mg/kg | 22.2 | - | --- | --- | 7.6 | - | --- | --- | 5.3 | - | --- | --- | 5.9 | - | --- | --- | 6.8 | - | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.05 | U | --- | --- | 0.106 | - | --- | --- | 0.228 | - | --- | --- | 0.096 | - | --- | --- | 0.116 | - | --- | --- |
| Barium | mg/L | 0.107 | - | --- | --- | 0.175 | - | --- | --- | 0.148 | - | --- | --- | 0.162 | - | --- | --- | 0.05 | U | --- | --- |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.025 | - | --- | --- |
| Lead | mg/L | 0.05 | U | --- | --- | 0.944 | - | --- | --- | 1.36 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- |
| Selenium | mg/L | 0.25 | U, D | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | **0.0068** | U | --- | --- | **0.0054** | U | 0.002 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | **0.339** | U | --- | --- | **0.269** | U | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | 0.394 | - | --- | --- | 0.175 | - | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0292 | - | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | **0.017** | U | --- | --- | **0.0135** | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | **0.0068** | U | --- | --- | **0.0054** | U | 0.002 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | 0.0678 | - | --- | --- | 0.0252 | - | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | **0.017** | U | --- | --- | **0.0135** | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | 0.017 | U | --- | --- | 0.0135 | U | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 0.0339 | U | --- | --- | 0.0269 | U | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 0.0075 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| **VOCs** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.887 | U | --- | --- | 4.43 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.887 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.445 | U | --- | --- | 0.669 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 1.78 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.887 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 1.78 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | 0.887 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | 4.45 | U | --- | --- | 5.16 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | 0.887 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | 1.78 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | 4.45 | U | --- | --- | 5.16 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Benzo(k)fluoranthene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | 38.1 | D | --- | --- | **599** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | 0.887 | U | --- | --- | 3.49 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | **0.887** | U | --- | --- | **1.03** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | 4.37 | - | --- | --- | 59.3 | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 0.445 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 1.78 | U | --- | --- | 2.06 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | 0.887 | U | --- | --- | 0.516 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | 0.887 | U | --- | --- | 1.03 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | 4.45 | U | --- | --- | 5.16 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **65.0** | - | **102** | - | **88.3** | - | **83.6** | - |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 59.7 | - | 72.8 | - | 48.8 | - | 80.6 | - |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.79 | - | 1.53 | - | 1.13 | - | 2.05 | - |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 72.9 | B | 74.1 | B | 42.4 | B | 90.8 | B |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **387** | - | **516** | - | **466** | - | **452** | - |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.497 | - | 1.77 | D | 1.45 | D | 2.17 | D |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 44.1 | EL, U, D | 49.6 | EL, U, D | 46.4 | EL, U, D | 47.6 | EL, U, D |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.63 | - | 1.16 | - | 0.75 | - | 1.82 | - |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0110 | - | --- | --- | 0.0352 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | 0.0065 | U | --- | --- | 0.0184 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| alpha-Chlordane | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.052 | U | --- | --- | 0.0636 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | 0.0228 | - | --- | --- | 0.0184 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | 0.0081 | - | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | **0.0039** | U | --- | --- | **0.0048** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 0.0065 | U | --- | --- | 0.0079 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | 0.325 | U | --- | --- | 0.397 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | 1.0 | - | --- | --- | **1.4** | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | **1.9** | - | --- | --- | **2.4** | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | 0.6 | - | --- | --- | 0.9 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.051 | U | --- | --- | 0.059 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.051 | U | --- | --- | 0.059 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 0.25 | U | --- | --- | 0.29 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | 0.253 | U | --- | --- | 0.293 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | 0.242 | U | --- | --- | 0.281 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | 0.751 | D | --- | --- | 0.193 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | 0.511 | LC, P | --- | --- | 0.608 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | 0.322 | LC, P | --- | --- | 0.293 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | 12.4 | U | --- | --- | 14.4 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | 12.5 | # | --- | --- | 14.5 | # | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 7.05 | - | --- | --- | 6.75 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | 63 | - | --- | --- | 69 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-11 | | 1709465-12 | | 1709465-13 | | 1709465-14 | | 1709465-15 | | 1709465-16 | | 1709465-17 | | 1709465-18 | | 1709465-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-41 (0-7_9') | | SED-G-41 (6_32-7_9') | | SED-C-42 (0-7_3') | | SED-G-42 (1_46-2_92') | | Trip Blank - 3 | | SED-C-11 (0-1_6') - Dried | | SED-C-5 (0-1_6') - Dried | | SED-C-7 (0-2_2') - Dried | | SED-C-34 (0-8_0') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.134 | - | --- | --- | 0.05 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | 0.138 | - | --- | --- | 0.05 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.0119 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.037 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | 0.05 | U | --- | --- | 0.239 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| **VOCs - Low** | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- |
| | | | | | | | |
| **VOCs** | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | |
| Arsenic | mg/kg | **115** | - | **141** | - | **104** | - |
| Barium | mg/kg | 93.8 | - | 92.0 | - | 87.3 | - |
| Cadmium | mg/kg | 2.16 | - | 1.95 | - | 1.53 | - |
| Chromium | mg/kg | **113** | B | 95.0 | B | **118** | B |
| Lead | mg/kg | **455** | - | **496** | - | **333** | - |
| Mercury | mg/kg | 1.89 | D | 2.80 | D | 2.28 | D |
| Selenium | mg/kg | 46.6 | EL, U, D | 45 | EL, U, D | 44.3 | EL, U, D |
| Silver | mg/kg | 2.30 | - | 2.23 | - | 3.52 | - |
| **Pesticides** | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709465-20 | | 1709465-21 | | 1709465-22 | |
|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-43 (0-6_6') - Dried | | SED-C-41 (0-7_9') - Dried | | SED-C-42 (0-7_3') - Dried | |
| Sample Date | | 09/15/2017 | | 09/15/2017 | | 09/15/2017 | |
| Sample Depth | | | | | | | |
| Soil Type | | | | | | | |
| Group Designation | | | | | | | |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- |
| | | | | | | | |
| **TCLP Metals** | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709501-01 | | 1709501-02 | | 1709501-03 | | 1709501-04 | | 1709501-05 | | 1709501-06 | | 1709501-07 | | 1709501-08 | | 1709501-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-63 (0-3_7') | | SED-G-63 (2_96-3_7') | | SED-C-61 (0-6_3') | | SED-G-61 (5_04-6_3') | | SED-C-62 (0-5_8') | | SED-G-62 (4_64-5_8') | | SED-C-60 (0-5_8') | | SED-G-60 (4_64-5_8') | | SED-C-1 (0-1_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | **0.0093** | U | --- | --- | **0.0112** | U | --- | --- | **0.0119** | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0699 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0589 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0364 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | **0.236** | U | --- | --- | **0.464** | U | --- | --- | **0.561** | U | --- | --- | **0.595** | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 2-Butanone | mg/kg | --- | --- | 0.0275 | - | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.253 | - | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.520 | - | --- | --- | 0.0299 | - | --- | --- | 0.0297 | U | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.128 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Acetone | mg/kg | --- | --- | 0.229 | - | --- | --- | 0.251 | - | --- | --- | 0.297 | - | --- | --- | 1.66 | - | --- | --- |
| Benzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0326 | - | --- | --- | 0.0308 | - | --- | --- | 0.0297 | U | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Bromoform | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Bromomethane | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0299 | - | --- | --- | 0.0281 | U | --- | --- | 0.0416 | - | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0569 | - | --- | --- | 0.0281 | U | --- | --- | 0.0751 | - | --- | --- |
| Chloroethane | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Chloroform | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Chloromethane | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | **0.0118** | U | --- | --- | **0.0232** | U | --- | --- | **0.0281** | U | --- | --- | **0.0297** | U | --- | --- |

| Laboratory Sample Designation | | 1709501-01 | | 1709501-02 | | 1709501-03 | | 1709501-04 | | 1709501-05 | | 1709501-06 | | 1709501-07 | | 1709501-08 | | 1709501-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-63 (0-3_7') | | SED-G-63 (2_96-3_7') | | SED-C-61 (0-6_3') | | SED-G-61 (5_04-6_3') | | SED-C-62 (0-5_8') | | SED-G-62 (4_64-5_8') | | SED-C-60 (0-5_8') | | SED-G-60 (4_64-5_8') | | SED-C-1 (0-1_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | **0.0093** | U | --- | --- | **0.0112** | U | --- | --- | **0.0119** | U | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0233 | - | --- | --- | 0.0433 | - | --- | --- | 0.0311 | - | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0930 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.220 | - | --- | --- | 0.0324 | - | --- | --- | 0.0361 | - | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0279 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Styrene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Toluene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | **0.0118** | U | --- | --- | **0.0232** | U | --- | --- | **0.0281** | U | --- | --- | **0.0297** | U | --- | --- |
| Trichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0232 | U | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Xylene O | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0719 | - | --- | --- | 0.0281 | U | --- | --- | 0.0297 | U | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 0.0236 | U | --- | --- | 0.0464 | U | --- | --- | 0.0561 | U | --- | --- | 0.0595 | U | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | | | | | | | | | | | | |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 1,2-Dichlorobenzene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.06 | - | --- | --- | 0.434 | U |
| 1,3-Dichlorobenzene | mg/kg | 0.911 | U | --- | --- | 0.506 | U | --- | --- | 0.927 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 1,4-Dichlorobenzene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 2,4,5-Trichlorophenol | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 2,4,6-Trichlorophenol | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 2,4-Dichlorophenol | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 2,4-Dimethylphenol | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 2,4-Dinitrophenol | mg/kg | 1.82 | U | --- | --- | 2.02 | U | --- | --- | 1.86 | U | --- | --- | 2.05 | U | --- | --- | 2.17 | U |
| 2,4-Dinitrotoluene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 2,6-Dinitrotoluene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 2-Chloronaphthalene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 2-Chlorophenol | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| 2-Methylnaphthalene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |

| Laboratory Sample Designation | | 1709501-01 | | 1709501-02 | | 1709501-03 | | 1709501-04 | | 1709501-05 | | 1709501-06 | | 1709501-07 | | 1709501-08 | | 1709501-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-63 (0-3_7') | | SED-G-63 (2_96-3_7') | | SED-C-61 (0-6_3') | | SED-G-61 (5_04-6_3') | | SED-C-62 (0-5_8') | | SED-G-62 (4_64-5_8') | | SED-C-60 (0-5_8') | | SED-G-60 (4_64-5_8') | | SED-C-1 (0-1_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 2-Methylphenol | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 2-Nitrophenol | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 3,3´-Dichlorobenzidine | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.869 | U |
| 3+4-Methylphenol | mg/kg | 1.82 | U | --- | --- | 2.02 | U | --- | --- | 1.86 | U | --- | --- | 2.05 | U | --- | --- | 0.869 | U |
| 4-Bromophenyl-phenylether | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| 4-Chloroaniline | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.869 | U |
| 4-Nitrophenol | mg/kg | 4.57 | U | --- | --- | 5.06 | U | --- | --- | 4.65 | U | --- | --- | 5.13 | U | --- | --- | 2.17 | U |
| Acenaphthene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Acenaphthylene | mg/kg | 0.911 | U | --- | --- | 0.506 | U | --- | --- | 0.927 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| Acetophenone | mg/kg | 1.82 | U | --- | --- | 2.02 | U | --- | --- | 1.86 | U | --- | --- | 2.05 | U | --- | --- | 0.869 | U |
| Aniline | mg/kg | 4.57 | U | --- | --- | 5.06 | U | --- | --- | 4.65 | U | --- | --- | 5.13 | U | --- | --- | 2.17 | U |
| Anthracene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Azobenzene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Benzo(a)anthracene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Benzo(a)pyrene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.240 | - |
| Benzo(b)fluoranthene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Benzo(g,h,i)perylene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Benzo(k)fluoranthene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| bis(2-Chloroethoxy)methane | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| bis(2-Chloroethyl)ether | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | 66.4 | D | --- | --- | **293** | D | --- | --- | **126** | D | --- | --- | **147** | D | --- | --- | 0.434 | U |
| Butylbenzylphthalate | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Chrysene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.224 | - |
| Dibenzo(a,h)Anthracene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.217 | U |
| Dibenzofuran | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Diethylphthalate | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Dimethylphthalate | mg/kg | **0.911** | U | --- | --- | **1.01** | U | --- | --- | **0.927** | U | --- | --- | **1.02** | U | --- | --- | 0.434 | U |
| Di-n-butylphthalate | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Di-n-octylphthalate | mg/kg | 2.46 | - | --- | --- | 21.7 | - | --- | --- | 11.8 | - | --- | --- | 47.9 | D | --- | --- | 0.434 | U |
| Fluoranthene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Fluorene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Hexachlorobenzene | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| Hexachlorobutadiene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Hexachloroethane | mg/kg | 0.457 | U | --- | --- | 0.506 | U | --- | --- | 0.465 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Isophorone | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Naphthalene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Nitrobenzene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| N-Nitrosodimethylamine | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Pentachlorophenol | mg/kg | 1.82 | U | --- | --- | 2.02 | U | --- | --- | 1.86 | U | --- | --- | 2.05 | U | --- | --- | 2.17 | U |
| Phenanthrene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Phenol | mg/kg | 0.911 | U | --- | --- | 0.506 | U | --- | --- | 0.927 | U | --- | --- | 0.513 | U | --- | --- | 0.434 | U |
| Pyrene | mg/kg | 0.911 | U | --- | --- | 1.01 | U | --- | --- | 0.927 | U | --- | --- | 1.02 | U | --- | --- | 0.434 | U |
| Pyridine | mg/kg | 4.57 | U | --- | --- | 5.06 | U | --- | --- | 4.65 | U | --- | --- | 5.13 | U | --- | --- | 2.17 | U |

| Laboratory Sample Designation | | 1709501-01 | | 1709501-02 | | 1709501-03 | | 1709501-04 | | 1709501-05 | | 1709501-06 | | 1709501-07 | | 1709501-08 | | 1709501-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-63 (0-3_7') | | SED-G-63 (2_96-3_7') | | SED-C-61 (0-6_3') | | SED-G-61 (5_04-6_3') | | SED-C-62 (0-5_8') | | SED-G-62 (4_64-5_8') | | SED-C-60 (0-5_8') | | SED-G-60 (4_64-5_8') | | SED-C-1 (0-1_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0068 | U | --- | --- | 0.0205 | - | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| 4,4´-DDE | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| 4,4´-DDT | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Aldrin | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| alpha-BHC | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| alpha-Chlordane | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0111 | LC, P | --- | --- | 0.0032 | U |
| beta-BHC | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Chlordane (Total) | mg/kg | 0.0544 | U | --- | --- | 0.0614 | U | --- | --- | 0.0586 | U | --- | --- | 0.0843 | U | --- | --- | 0.0258 | U |
| delta-BHC | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Dieldrin | mg/kg | 0.0068 | U | --- | --- | 0.0118 | LC, P | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Endosulfan I | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Endosulfan II | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0225 | LC, P | --- | --- | 0.0032 | U |
| Endosulfan Sulfate | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Endrin | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Endrin Ketone | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| gamma-BHC (Lindane) | mg/kg | **0.0050** | - | --- | --- | **0.0046** | U | --- | --- | **0.0044** | U | --- | --- | **0.0078** | LC, P | --- | --- | 0.0019 | U |
| gamma-Chlordane | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Heptachlor | mg/kg | 0.0253 | - | --- | --- | 0.0077 | U | --- | --- | 0.0117 | - | --- | --- | 0.0541 | LC, P | --- | --- | 0.0032 | U |
| Heptachlor Epoxide | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Hexachlorobenzene | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Methoxychlor | mg/kg | 0.0068 | U | --- | --- | 0.0077 | U | --- | --- | 0.0073 | U | --- | --- | 0.0105 | U | --- | --- | 0.0032 | U |
| Toxaphene | mg/kg | 0.34 | U | --- | --- | 0.384 | U | --- | --- | 0.367 | U | --- | --- | 0.527 | U | --- | --- | 0.161 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.06 | U |
| Aroclor 1221 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.06 | U |
| Aroclor 1232 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.06 | U |
| Aroclor 1242 | mg/kg | 0.7 | - | --- | --- | 0.2 | U | --- | --- | 1.0 | - | --- | --- | 0.2 | U | --- | --- | 0.06 | U |
| Aroclor 1248 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | **20.9** | D | --- | --- | 0.06 | U |
| Aroclor 1254 | mg/kg | 0.8 | - | --- | --- | 0.2 | - | --- | --- | **2.1** | - | --- | --- | **12.0** | D | --- | --- | 0.06 | U |
| Aroclor 1260 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.6 | - | --- | --- | **2.1** | - | --- | --- | 0.06 | U |
| Aroclor 1262 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.06 | U |
| Aroclor 1268 | mg/kg | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.06 | U |

| Laboratory Sample Designation | | 1709501-01 | | 1709501-02 | | 1709501-03 | | 1709501-04 | | 1709501-05 | | 1709501-06 | | 1709501-07 | | 1709501-08 | | 1709501-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-63 (0-3_7') | | SED-G-63 (2_96-3_7') | | SED-C-61 (0-6_3') | | SED-G-61 (5_04-6_3') | | SED-C-62 (0-5_8') | | SED-G-62 (4_64-5_8') | | SED-C-60 (0-5_8') | | SED-G-60 (4_64-5_8') | | SED-C-1 (0-1_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.241 | U, D | --- | --- | 0.057 | U | --- | --- | 0.056 | U | --- | --- | 0.073 | U | --- | --- | 0.025 | U |
| 2,4,5-TP (Silvex) | mg/kg | 0.685 | D | --- | --- | 0.373 | LC, P | --- | --- | 0.299 | LC, P | --- | --- | 0.073 | U | --- | --- | 0.025 | U |
| 2,4-D | mg/kg | 1.19 | U, D | --- | --- | 0.283 | U | --- | --- | 0.276 | U | --- | --- | 0.359 | U | --- | --- | 0.124 | U |
| 2,4-DB | mg/kg | 1.21 | U, D | --- | --- | 0.286 | U | --- | --- | 0.279 | U | --- | --- | 0.363 | U | --- | --- | 0.125 | U |
| Dalapon | mg/kg | 1.16 | U, D | --- | --- | 0.274 | U | --- | --- | 0.267 | U | --- | --- | 0.348 | U | --- | --- | 0.12 | U |
| Dicamba | mg/kg | 0.296 | LC, P, D | --- | --- | 0.057 | U | --- | --- | 0.346 | LC, P | --- | --- | 0.072 | U | --- | --- | 0.025 | U |
| Dichlorprop | mg/kg | 2.78 | LC, P, D | --- | --- | 0.528 | LC, P | --- | --- | 1.17 | LC, P | --- | --- | 2.55 | LC, P | --- | --- | 0.124 | U |
| Dinoseb | mg/kg | 1.21 | U, D | --- | --- | 0.286 | U | --- | --- | 0.481 | LC, P | --- | --- | 0.363 | U | --- | --- | 0.125 | U |
| MCPA | mg/kg | 59 | U, D | --- | --- | 14 | U | --- | --- | 13.6 | U | --- | --- | 17.8 | U | --- | --- | 6.13 | U |
| MCPP | mg/kg | 59.7 | # | --- | --- | 14.2 | # | --- | --- | 13.8 | # | --- | --- | 18.0 | # | --- | --- | 6.20 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 7.63 | - | --- | --- | 6.91 | - | --- | --- | 7.32 | - | --- | --- | 7.10 | - | --- | --- | 7.76 | - |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > |
| Percent Moisture | % | 65 | - | --- | --- | 68 | - | --- | --- | 66 | - | --- | --- | 77 | - | --- | --- | 26 | - |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U |
| Reactive Sulfide | mg/kg | 13.8 | - | --- | --- | 2 | U | --- | --- | 3.8 | - | --- | --- | 14.8 | - | --- | --- | 2 | U |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.05 | U | --- | --- | 0.355 | - | --- | --- | 0.05 | U | --- | --- | 0.136 | - | --- | --- | 0.136 | - |
| Barium | mg/L | 0.068 | - | --- | --- | 0.05 | U | --- | --- | 0.071 | - | --- | --- | 0.171 | - | --- | --- | 0.187 | - |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U |
| Lead | mg/L | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 1.29 | - |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U |
| Selenium | mg/L | 0.5 | U, D | --- | --- | 0.3 | U, D | --- | --- | 0.5 | U, D | --- | --- | 0.3 | U, D | --- | --- | 0.1 | U |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709501-10 | | 1709501-11 | | 1709501-12 | | 1709501-13 | | 1709501-14 | | 1709501-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-4 | | SED-C-63 (0-3_7') - Dried | | SED-C-61 (0-6_3') - Dried | | SED-C-62 (0-5_8') - Dried | | SED-C-60 (0-5_8') - Dried | | SED-C-1 (0-1_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | 0.002 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709501-10 | | 1709501-11 | | 1709501-12 | | 1709501-13 | | 1709501-14 | | 1709501-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-4 | | SED-C-63 (0-3_7') - Dried | | SED-C-61 (0-6_3') - Dried | | SED-C-62 (0-5_8') - Dried | | SED-C-60 (0-5_8') - Dried | | SED-C-1 (0-1_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | 0.002 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | 0.0075 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709501-10 | | 1709501-11 | | 1709501-12 | | 1709501-13 | | 1709501-14 | | 1709501-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-4 | | SED-C-63 (0-3_7') - Dried | | SED-C-61 (0-6_3') - Dried | | SED-C-62 (0-5_8') - Dried | | SED-C-60 (0-5_8') - Dried | | SED-C-1 (0-1_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709501-10 | | 1709501-11 | | 1709501-12 | | 1709501-13 | | 1709501-14 | | 1709501-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-4 | | SED-C-63 (0-3_7') - Dried | | SED-C-61 (0-6_3') - Dried | | SED-C-62 (0-5_8') - Dried | | SED-C-60 (0-5_8') - Dried | | SED-C-1 (0-1_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | |
| **Total Metals** | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | **120** | - | **253** | - | **157** | - | **302** | - | **51.6** | - |
| Barium | mg/kg | --- | --- | 70.1 | - | 135 | - | 86.9 | - | 102 | - | 40.2 | - |
| Cadmium | mg/kg | --- | --- | 2.96 | - | 1.35 | - | 2.33 | - | 2.13 | - | 2.95 | - |
| Chromium | mg/kg | --- | --- | **138** | - | **104** | - | **114** | - | **116** | - | 26.6 | - |
| Lead | mg/kg | --- | --- | **421** | - | **367** | - | **440** | - | **356** | - | **240** | - |
| Mercury | mg/kg | --- | --- | 2.22 | D | 2.16 | D | 2.92 | D | 2.34 | D | 1.70 | D |
| Selenium | mg/kg | --- | --- | 20 | EL, U, D | 18.4 | EL, U, D | 18.4 | EL, U, D | 19.9 | EL, U, D | 19.6 | EL, U, D |
| Silver | mg/kg | --- | --- | 2.57 | - | 1.57 | - | 2.08 | - | 1.37 | - | 0.61 | - |
| **Pesticides** | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709501-10 | | 1709501-11 | | 1709501-12 | | 1709501-13 | | 1709501-14 | | 1709501-15 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-4 | | SED-C-63 (0-3_7') - Dried | | SED-C-61 (0-6_3') - Dried | | SED-C-62 (0-5_8') - Dried | | SED-C-60 (0-5_8') - Dried | | SED-C-1 (0-1_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | |
| **Herbicides** | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-01 | | 1709502-02 | | 1709502-03 | | 1709502-04 | | 1709502-05 | | 1709502-06 | | 1709502-07 | | 1709502-08 | | 1709502-09 | | 1709502-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-1 (1_2-1_5') | | SED-C-3 (0-2_0') | | SED-G-3 (1_2-1_6') | | SED-C-80 (0-2_0') | | SED-G-80 (0_8-1_2') | | SED-C-44 (0-0_7') | | SED-G-44 (5_6-7_0') | | SED-C-45 (0-7_9') | | SED-G-45 (6_32-7_9') | | SED-C-47 (0-8_1') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | 0.002 | U | --- | --- | 0.0028 | U | --- | --- | **0.0101** | U | --- | --- | **0.0073** | U | --- | --- | **0.0074** | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 1,4-Dioxane | mg/kg | 0.102 | U | --- | --- | 0.142 | U | --- | --- | **0.504** | U | --- | --- | **0.365** | U | --- | --- | **0.368** | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 2-Butanone | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 2-Hexanone | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| Acetone | mg/kg | 0.0124 | - | --- | --- | 0.0242 | - | --- | --- | 0.159 | - | --- | --- | 0.125 | - | --- | --- | 0.165 | - | --- | --- |
| Benzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Bromobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Bromochloromethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Bromodichloromethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Bromoform | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Bromomethane | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| Carbon Disulfide | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Chlorobenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Chloroethane | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| Chloroform | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Chloromethane | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | **0.0252** | U | --- | --- | **0.0183** | U | --- | --- | **0.0184** | U | --- | --- |
| Dibromochloromethane | mg/kg | 0.002 | U | --- | --- | 0.0028 | U | --- | --- | **0.0101** | U | --- | --- | **0.0073** | U | --- | --- | **0.0074** | U | --- | --- |
| Dibromomethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |

| Laboratory Sample Designation | | 1709502-01 | | 1709502-02 | | 1709502-03 | | 1709502-04 | | 1709502-05 | | 1709502-06 | | 1709502-07 | | 1709502-08 | | 1709502-09 | | 1709502-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-1 (1_2-1_5') | | SED-C-3 (0-2_0') | | SED-G-3 (1_2-1_6') | | SED-C-80 (0-2_0') | | SED-G-80 (0_8-1_2') | | SED-C-44 (0-0_7') | | SED-G-44 (5_6-7_0') | | SED-C-45 (0-7_9') | | SED-G-45 (6_32-7_9') | | SED-C-47 (0-8_1') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Diethyl Ether | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0355 | - | --- | --- | 0.0582 | - | --- | --- | 0.0344 | - | --- | --- |
| Di-isopropyl ether | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Ethylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Isopropylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Methylene Chloride | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| Naphthalene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| n-Butylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| n-Propylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| sec-Butylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Styrene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| tert-Butylbenzene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Tetrachloroethene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Tetrahydrofuran | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Toluene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | **0.0252** | U | --- | --- | **0.0183** | U | --- | --- | **0.0184** | U | --- | --- |
| Trichloroethene | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Vinyl Chloride | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| Xylene O | mg/kg | 0.0051 | U | --- | --- | 0.0071 | U | --- | --- | 0.0252 | U | --- | --- | 0.0183 | U | --- | --- | 0.0184 | U | --- | --- |
| Xylene P,M | mg/kg | 0.0102 | U | --- | --- | 0.0142 | U | --- | --- | 0.0504 | U | --- | --- | 0.0365 | U | --- | --- | 0.0368 | U | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-01 | | 1709502-02 | | 1709502-03 | | 1709502-04 | | 1709502-05 | | 1709502-06 | | 1709502-07 | | 1709502-08 | | 1709502-09 | | 1709502-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-1 (1_2-1_5') | | SED-C-3 (0-2_0') | | SED-G-3 (1_2-1_6') | | SED-C-80 (0-2_0') | | SED-G-80 (0_8-1_2') | | SED-C-44 (0-0_7') | | SED-G-44 (5_6-7_0') | | SED-C-45 (0-7_9') | | SED-G-45 (6_32-7_9') | | SED-C-47 (0-8_1') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-01 | | 1709502-02 | | 1709502-03 | | 1709502-04 | | 1709502-05 | | 1709502-06 | | 1709502-07 | | 1709502-08 | | 1709502-09 | | 1709502-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-1 (1_2-1_5') | | SED-C-3 (0-2_0') | | SED-G-3 (1_2-1_6') | | SED-C-80 (0-2_0') | | SED-G-80 (0_8-1_2') | | SED-C-44 (0-0_7') | | SED-G-44 (5_6-7_0') | | SED-C-45 (0-7_9') | | SED-G-45 (6_32-7_9') | | SED-C-47 (0-8_1') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2,4-Dichlorophenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2,4-Dimethylphenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2,4-Dinitrophenol | mg/kg | --- | --- | 2.91 | U | --- | --- | 1.65 | U | --- | --- | 1.75 | U | --- | --- | 1.73 | U | --- | --- | 1.96 | U |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 2-Chloronaphthalene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 2-Chlorophenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2-Methylnaphthalene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| 2-Methylphenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 2-Nitrophenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 3+4-Methylphenol | mg/kg | --- | --- | 1.16 | U | --- | --- | 1.65 | U | --- | --- | 1.75 | U | --- | --- | 1.73 | U | --- | --- | 1.96 | U |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 4-Chloroaniline | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| 4-Nitrophenol | mg/kg | --- | --- | 2.91 | U | --- | --- | 4.12 | U | --- | --- | 4.38 | U | --- | --- | 4.32 | U | --- | --- | 4.91 | U |
| Acenaphthene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Acenaphthylene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Acetophenone | mg/kg | --- | --- | 1.16 | U | --- | --- | 1.65 | U | --- | --- | 1.75 | U | --- | --- | 1.73 | U | --- | --- | 1.96 | U |
| Aniline | mg/kg | --- | --- | 2.91 | U | --- | --- | 4.12 | U | --- | --- | 4.38 | U | --- | --- | 4.32 | U | --- | --- | 4.91 | U |
| Anthracene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Azobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Benzo(a)anthracene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Benzo(a)pyrene | mg/kg | --- | --- | 0.291 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| Benzo(b)fluoranthene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Benzo(k)fluoranthene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | 6.62 | - | --- | --- | **240** | D | --- | --- | 87.7 | D | --- | --- | **165** | D | --- | --- | 46.8 | D |
| Butylbenzylphthalate | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Chrysene | mg/kg | --- | --- | 0.331 | - | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | 0.291 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| Dibenzofuran | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Diethylphthalate | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |

| Laboratory Sample Designation | | 1709502-01 | | 1709502-02 | | 1709502-03 | | 1709502-04 | | 1709502-05 | | 1709502-06 | | 1709502-07 | | 1709502-08 | | 1709502-09 | | 1709502-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-1 (1_2-1_5') | | SED-C-3 (0-2_0') | | SED-G-3 (1_2-1_6') | | SED-C-80 (0-2_0') | | SED-G-80 (0_8-1_2') | | SED-C-44 (0-0_7') | | SED-G-44 (5_6-7_0') | | SED-C-45 (0-7_9') | | SED-G-45 (6_32-7_9') | | SED-C-47 (0-8_1') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Dimethylphthalate | mg/kg | --- | --- | 0.58 | U | --- | --- | **0.822** | U | --- | --- | **0.873** | U | --- | --- | **0.861** | U | --- | --- | **0.978** | U |
| Di-n-butylphthalate | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Di-n-octylphthalate | mg/kg | --- | --- | 0.58 | U | --- | --- | 49.7 | D | --- | --- | 8.60 | - | --- | --- | 9.13 | - | --- | --- | 3.06 | - |
| Fluoranthene | mg/kg | --- | --- | 0.595 | - | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Fluorene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Hexachlorobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Hexachloroethane | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.412 | U | --- | --- | 0.438 | U | --- | --- | 0.432 | U | --- | --- | 0.491 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Isophorone | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Naphthalene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Nitrobenzene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| N-Nitrosodimethylamine | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Pentachlorophenol | mg/kg | --- | --- | 2.91 | U | --- | --- | 1.65 | U | --- | --- | 1.75 | U | --- | --- | 1.73 | U | --- | --- | 1.96 | U |
| Phenanthrene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Phenol | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Pyrene | mg/kg | --- | --- | 0.58 | U | --- | --- | 0.822 | U | --- | --- | 0.873 | U | --- | --- | 0.861 | U | --- | --- | 0.978 | U |
| Pyridine | mg/kg | --- | --- | 2.91 | U | --- | --- | 4.12 | U | --- | --- | 4.38 | U | --- | --- | 4.32 | U | --- | --- | 4.91 | U |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0279 | - | --- | --- | 0.0067 | U | --- | --- | 0.0110 | LC, P | --- | --- | 0.0072 | U |
| 4,4´-DDE | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0317 | - |
| 4,4´-DDT | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Aldrin | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| alpha-BHC | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| alpha-Chlordane | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| beta-BHC | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Chlordane (Total) | mg/kg | --- | --- | 0.0338 | U | --- | --- | 0.0506 | U | --- | --- | 0.0532 | U | --- | --- | 0.0525 | U | --- | --- | 0.0578 | U |
| delta-BHC | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Dieldrin | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0118 | LC, P | --- | --- | 0.0067 | U | --- | --- | 0.0131 | LC, P | --- | --- | 0.0072 | U |
| Endosulfan I | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Endosulfan II | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Endosulfan Sulfate | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Endrin | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Endrin Ketone | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| gamma-BHC (Lindane) | mg/kg | --- | --- | 0.0025 | U | --- | --- | **0.0038** | U | --- | --- | **0.004** | U | --- | --- | **0.0039** | U | --- | --- | **0.0043** | U |
| gamma-Chlordane | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |

| Laboratory Sample Designation | | 1709502-01 | | 1709502-02 | | 1709502-03 | | 1709502-04 | | 1709502-05 | | 1709502-06 | | 1709502-07 | | 1709502-08 | | 1709502-09 | | 1709502-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-1 (1_2-1_5') | | SED-C-3 (0-2_0') | | SED-G-3 (1_2-1_6') | | SED-C-80 (0-2_0') | | SED-G-80 (0_8-1_2') | | SED-C-44 (0-0_7') | | SED-G-44 (5_6-7_0') | | SED-C-45 (0-7_9') | | SED-G-45 (6_32-7_9') | | SED-C-47 (0-8_1') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Heptachlor | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Heptachlor Epoxide | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Hexachlorobenzene | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Methoxychlor | mg/kg | --- | --- | 0.0042 | U | --- | --- | 0.0063 | U | --- | --- | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0072 | U |
| Toxaphene | mg/kg | --- | --- | 0.212 | U | --- | --- | 0.316 | U | --- | --- | 0.333 | U | --- | --- | 0.328 | U | --- | --- | 0.361 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | 0.09 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1221 | mg/kg | --- | --- | 0.09 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1232 | mg/kg | --- | --- | 0.09 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1242 | mg/kg | --- | --- | 0.3 | - | --- | --- | 0.9 | - | --- | --- | 1.0 | - | --- | --- | **1.2** | - | --- | --- | **1.3** | - |
| Aroclor 1248 | mg/kg | --- | --- | 0.09 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1254 | mg/kg | --- | --- | 0.8 | - | --- | --- | **2.2** | - | --- | --- | **2.4** | - | --- | --- | **2.6** | - | --- | --- | **3.1** | D |
| Aroclor 1260 | mg/kg | --- | --- | 0.3 | - | --- | --- | 0.4 | - | --- | --- | 0.9 | - | --- | --- | **1.1** | - | --- | --- | **1.2** | - |
| Aroclor 1262 | mg/kg | --- | --- | 0.09 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Aroclor 1268 | mg/kg | --- | --- | 0.09 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | 0.032 | U | --- | --- | 0.239 | U, D | --- | --- | 0.052 | U | --- | --- | 0.048 | U | --- | --- | 0.05 | U |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | 0.032 | U | --- | --- | 0.239 | U, D | --- | --- | 0.108 | LC, P | --- | --- | 0.181 | LC, P | --- | --- | 0.327 | - |
| 2,4-D | mg/kg | --- | --- | 0.161 | U | --- | --- | 1.18 | U, D | --- | --- | 0.256 | U | --- | --- | 0.239 | U | --- | --- | 0.245 | U |
| 2,4-DB | mg/kg | --- | --- | 0.162 | U | --- | --- | 1.2 | U, D | --- | --- | 0.259 | U | --- | --- | 0.241 | U | --- | --- | 0.248 | U |
| Dalapon | mg/kg | --- | --- | 0.156 | U | --- | --- | 1.14 | U, D | --- | --- | 0.248 | U | --- | --- | 0.231 | U | --- | --- | 0.238 | U |
| Dicamba | mg/kg | --- | --- | 0.032 | U | --- | --- | 0.312 | LC, P, D | --- | --- | 0.371 | LC, P | --- | --- | 0.563 | LC, P, D | --- | --- | 0.293 | LC, P |
| Dichlorprop | mg/kg | --- | --- | 0.161 | U | --- | --- | 1.18 | U, D | --- | --- | 0.459 | LC, P | --- | --- | 0.678 | LC, P | --- | --- | 1.07 | LC, P |
| Dinoseb | mg/kg | --- | --- | 0.162 | U | --- | --- | 1.2 | U, D | --- | --- | 0.294 | LC, P | --- | --- | 0.266 | LC, P | --- | --- | 0.417 | LC, P |
| MCPA | mg/kg | --- | --- | 7.95 | U | --- | --- | 58.5 | U, D | --- | --- | 12.7 | U | --- | --- | 11.8 | # | --- | --- | 12.1 | U |
| MCPP | mg/kg | --- | --- | 8.03 | # | --- | --- | 59.1 | # | --- | --- | 12.8 | # | --- | --- | 11.9 | # | --- | --- | 12.3 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | 7.91 | - | --- | --- | 6.97 | - | --- | --- | 7.49 | - | --- | --- | 7.31 | - | --- | --- | 7.42 | - |
| Flashpoint | °F | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > |
| Percent Moisture | % | --- | --- | 43 | - | --- | --- | 61 | - | --- | --- | 64 | - | --- | --- | 63 | - | --- | --- | 66 | - |
| Reactive Cyanide | mg/kg | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U |
| Reactive Sulfide | mg/kg | --- | --- | 2 | U | --- | --- | 2.0 | - | --- | --- | 24.3 | - | --- | --- | 2.1 | - | --- | --- | 6.5 | - |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | 0.249 | - | --- | --- | 0.127 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U |
| Barium | mg/L | --- | --- | 0.112 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.056 | - |
| Cadmium | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |
| Chromium | mg/L | --- | --- | 0.02 | U | --- | --- | 0.021 | - | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U |
| Lead | mg/L | --- | --- | 0.215 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U |
| Mercury | mg/L | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U |
| Selenium | mg/L | --- | --- | 0.15 | U, D | --- | --- | 0.25 | U, D | --- | --- | 0.3 | U, D | --- | --- | 0.5 | U, D | --- | --- | 0.25 | U, D |
| Silver | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709502-11 | | 1709502-12 | | 1709502-13 | | 1709502-14 | | 1709502-15 | | 1709502-16 | | 1709502-17 | | 1709502-17RE1 | | 1709502-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-47 (6_48-8_1') | | SED-C-46 (0-8_0') | | SED-G-46 (1_6-3_2') | | SED-C-35 (0-8_6') | | SED-G-35 (6_88-8_6') | | SED-C-37 (0-7_9') | | SED-G-37 (4_74-6_32') | | SED-G-37 (4_74-6_32') | | SED-C-36 (0-9_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.0066** | U | --- | --- | **0.0067** | U | --- | --- | **0.0073** | U | --- | --- | 0.0044 | U | 0.0046 | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.415 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0696 | - | --- | --- | 0.0298 | - | 0.0725 | - | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.227 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0603 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | **1.62** | E | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 1,4-Dioxane | mg/kg | **0.329** | U | --- | --- | **0.337** | U | --- | --- | **0.363** | U | --- | --- | **0.22** | U | **0.228** | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 2-Butanone | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.304 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 2-Hexanone | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0883 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| Acetone | mg/kg | 0.231 | - | --- | --- | 0.192 | - | --- | --- | 0.573 | - | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| Benzene | mg/kg | 0.0168 | - | --- | --- | 0.0169 | U | --- | --- | 0.0479 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Bromobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Bromochloromethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Bromodichloromethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Bromoform | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Bromomethane | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| Carbon Disulfide | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Chlorobenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | **4.74** | E | --- | --- | 0.0117 | - | 0.0114 | U | --- | --- |
| Chloroethane | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| Chloroform | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Chloromethane | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.0165** | U | --- | --- | **0.0169** | U | --- | --- | **0.0182** | U | --- | --- | **0.011** | U | **0.0114** | U | --- | --- |
| Dibromochloromethane | mg/kg | **0.0066** | U | --- | --- | **0.0067** | U | --- | --- | **0.0073** | U | --- | --- | 0.0044 | U | 0.0046 | U | --- | --- |
| Dibromomethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |

| Laboratory Sample Designation | | 1709502-11 | | 1709502-12 | | 1709502-13 | | 1709502-14 | | 1709502-15 | | 1709502-16 | | 1709502-17 | | 1709502-17RE1 | | 1709502-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-47 (6_48-8_1') | | SED-C-46 (0-8_0') | | SED-G-46 (1_6-3_2') | | SED-C-35 (0-8_6') | | SED-G-35 (6_88-8_6') | | SED-C-37 (0-7_9') | | SED-G-37 (4_74-6_32') | | SED-G-37 (4_74-6_32') | | SED-C-36 (0-9_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Diethyl Ether | mg/kg | 0.0383 | - | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.0189 | - | 0.0165 | - | --- | --- |
| Di-isopropyl ether | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Ethylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.111 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Isopropylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0334 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Methylene Chloride | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| Naphthalene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.651 | - | --- | --- | 0.0149 | - | 0.0114 | U | --- | --- |
| n-Butylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.127 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| n-Propylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0513 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| sec-Butylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0541 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Styrene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| tert-Butylbenzene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Tetrachloroethene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Tetrahydrofuran | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Toluene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.102 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.0165** | U | --- | --- | **0.0169** | U | --- | --- | **0.0182** | U | --- | --- | **0.011** | U | **0.0114** | U | --- | --- |
| Trichloroethene | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0182 | U | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Vinyl Chloride | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.0363 | U | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| Xylene O | mg/kg | 0.0165 | U | --- | --- | 0.0169 | U | --- | --- | 0.0887 | - | --- | --- | 0.011 | U | 0.0114 | U | --- | --- |
| Xylene P,M | mg/kg | 0.0329 | U | --- | --- | 0.0337 | U | --- | --- | 0.172 | - | --- | --- | 0.022 | U | 0.0228 | U | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.18 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 6.48 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **10.0** | - | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-11 | | 1709502-12 | | 1709502-13 | | 1709502-14 | | 1709502-15 | | 1709502-16 | | 1709502-17 | | 1709502-17RE1 | | 1709502-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-47 (6_48-8_1') | | SED-C-46 (0-8_0') | | SED-G-46 (1_6-3_2') | | SED-C-35 (0-8_6') | | SED-G-35 (6_88-8_6') | | SED-C-37 (0-7_9') | | SED-G-37 (4_74-6_32') | | SED-G-37 (4_74-6_32') | | SED-C-36 (0-9_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **259** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **6.48** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 6.48 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **6.48** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **6.48** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **39.7** | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.59** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **7.26** | - | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 6.48 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-11 | | 1709502-12 | | 1709502-13 | | 1709502-14 | | 1709502-15 | | 1709502-16 | | 1709502-17 | | 1709502-17RE1 | | 1709502-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-47 (6_48-8_1') | | SED-C-46 (0-8_0') | | SED-G-46 (1_6-3_2') | | SED-C-35 (0-8_6') | | SED-G-35 (6_88-8_6') | | SED-C-37 (0-7_9') | | SED-G-37 (4_74-6_32') | | SED-G-37 (4_74-6_32') | | SED-C-36 (0-9_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **1.3** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 1.3 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.59 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 1.18 | - | --- | --- | --- | --- | 0.961 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.434 | U | --- | --- | **0.876** | - | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2,4-Dichlorophenol | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2,4-Dimethylphenol | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2,4-Dinitrophenol | mg/kg | --- | --- | 1.73 | U | --- | --- | 1.88 | U | --- | --- | 1.94 | U | --- | --- | --- | --- | 1.92 | U |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 2-Chloronaphthalene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 2-Chlorophenol | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2-Methylnaphthalene | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 2-Methylphenol | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 2-Nitrophenol | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 3+4-Methylphenol | mg/kg | --- | --- | 1.73 | U | --- | --- | 1.88 | U | --- | --- | 1.94 | U | --- | --- | --- | --- | 1.92 | U |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| 4-Chloroaniline | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| 4-Nitrophenol | mg/kg | --- | --- | 4.34 | U | --- | --- | 4.7 | U | --- | --- | 4.85 | U | --- | --- | --- | --- | 4.82 | U |
| Acenaphthene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Acenaphthylene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Acetophenone | mg/kg | --- | --- | 1.73 | U | --- | --- | 1.88 | U | --- | --- | 1.94 | U | --- | --- | --- | --- | 1.92 | U |
| Aniline | mg/kg | --- | --- | 4.34 | U | --- | --- | 4.7 | U | --- | --- | 4.85 | U | --- | --- | --- | --- | 4.82 | U |
| Anthracene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Azobenzene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Benzo(a)anthracene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Benzo(a)pyrene | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.617 | - |
| Benzo(b)fluoranthene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Benzo(k)fluoranthene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | **118** | D | --- | --- | **216** | D | --- | --- | **182** | D | --- | --- | --- | --- | **472** | D |
| Butylbenzylphthalate | mg/kg | --- | --- | 0.864 | U | --- | --- | 1.25 | - | --- | --- | 1.49 | - | --- | --- | --- | --- | 0.961 | U |
| Chrysene | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.736 | - |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| Dibenzofuran | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Diethylphthalate | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |

| Laboratory Sample Designation | | 1709502-11 | | 1709502-12 | | 1709502-13 | | 1709502-14 | | 1709502-15 | | 1709502-16 | | 1709502-17 | | 1709502-17RE1 | | 1709502-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-47 (6_48-8_1') | | SED-C-46 (0-8_0') | | SED-G-46 (1_6-3_2') | | SED-C-35 (0-8_6') | | SED-G-35 (6_88-8_6') | | SED-C-37 (0-7_9') | | SED-G-37 (4_74-6_32') | | SED-G-37 (4_74-6_32') | | SED-C-36 (0-9_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dimethylphthalate | mg/kg | --- | --- | **0.864** | U | --- | --- | **0.937** | U | --- | --- | **0.968** | U | --- | --- | --- | --- | **0.961** | U |
| Di-n-butylphthalate | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Di-n-octylphthalate | mg/kg | --- | --- | 0.864 | U | --- | --- | 11.3 | - | --- | --- | 9.01 | - | --- | --- | --- | --- | 5.90 | - |
| Fluoranthene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 1.38 | - |
| Fluorene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Hexachlorobenzene | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Hexachloroethane | mg/kg | --- | --- | 0.434 | U | --- | --- | 0.47 | U | --- | --- | 0.485 | U | --- | --- | --- | --- | 0.482 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Isophorone | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Naphthalene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Nitrobenzene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| N-Nitrosodimethylamine | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Pentachlorophenol | mg/kg | --- | --- | 1.73 | U | --- | --- | 1.88 | U | --- | --- | 1.94 | U | --- | --- | --- | --- | 1.92 | U |
| Phenanthrene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Phenol | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 0.961 | U |
| Pyrene | mg/kg | --- | --- | 0.864 | U | --- | --- | 0.937 | U | --- | --- | 0.968 | U | --- | --- | --- | --- | 1.29 | - |
| Pyridine | mg/kg | --- | --- | 4.34 | U | --- | --- | 4.7 | U | --- | --- | 4.85 | U | --- | --- | --- | --- | 4.82 | U |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | 0.0097 | - | --- | --- | 0.0443 | - | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0366 | - |
| 4,4´-DDE | mg/kg | --- | --- | 0.0319 | LC, P | --- | --- | 0.0164 | LC, P | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0155 | LC, P |
| 4,4´-DDT | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Aldrin | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| alpha-BHC | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| alpha-Chlordane | mg/kg | --- | --- | 0.0081 | - | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| beta-BHC | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Chlordane (Total) | mg/kg | --- | --- | 0.0547 | U | --- | --- | 0.0559 | U | --- | --- | 0.06 | U | --- | --- | --- | --- | 0.0592 | U |
| delta-BHC | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Dieldrin | mg/kg | --- | --- | 0.0118 | LC, P | --- | --- | 0.0238 | LC, P | --- | --- | 0.0107 | - | --- | --- | --- | --- | 0.0179 | LC, P |
| Endosulfan I | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Endosulfan II | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Endosulfan Sulfate | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Endrin | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Endrin Ketone | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| gamma-BHC (Lindane) | mg/kg | --- | --- | **0.0041** | U | --- | --- | **0.0042** | U | --- | --- | **0.0045** | U | --- | --- | --- | --- | **0.0044** | U |
| gamma-Chlordane | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |

| Laboratory Sample Designation | | 1709502-11 | | 1709502-12 | | 1709502-13 | | 1709502-14 | | 1709502-15 | | 1709502-16 | | 1709502-17 | | 1709502-17RE1 | | 1709502-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-47 (6_48-8_1') | | SED-C-46 (0-8_0') | | SED-G-46 (1_6-3_2') | | SED-C-35 (0-8_6') | | SED-G-35 (6_88-8_6') | | SED-C-37 (0-7_9') | | SED-G-37 (4_74-6_32') | | SED-G-37 (4_74-6_32') | | SED-C-36 (0-9_5') | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Heptachlor | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Heptachlor Epoxide | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Hexachlorobenzene | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Methoxychlor | mg/kg | --- | --- | 0.0068 | U | --- | --- | 0.007 | U | --- | --- | 0.0075 | U | --- | --- | --- | --- | 0.0074 | U |
| Toxaphene | mg/kg | --- | --- | 0.342 | U | --- | --- | 0.35 | U | --- | --- | 0.375 | U | --- | --- | --- | --- | 0.37 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.1 | U |
| Aroclor 1221 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.1 | U |
| Aroclor 1232 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.1 | U |
| Aroclor 1242 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.1 | U |
| Aroclor 1248 | mg/kg | --- | --- | 0.8 | - | --- | --- | **3.3** | D | --- | --- | **1.7** | - | --- | --- | --- | --- | **2.2** | - |
| Aroclor 1254 | mg/kg | --- | --- | 0.6 | - | --- | --- | **2.2** | - | --- | --- | 0.9 | - | --- | --- | --- | --- | **1.6** | - |
| Aroclor 1260 | mg/kg | --- | --- | 0.2 | - | --- | --- | 0.8 | - | --- | --- | 0.3 | - | --- | --- | --- | --- | 0.4 | - |
| Aroclor 1262 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.1 | U |
| Aroclor 1268 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.1 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | 0.045 | U | --- | --- | 0.051 | U | --- | --- | 0.058 | U | --- | --- | --- | --- | 0.265 | U, D |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | 0.116 | LC, P | --- | --- | 0.061 | LC, P | --- | --- | 0.116 | LC, P | --- | --- | --- | --- | 0.265 | U, D |
| 2,4-D | mg/kg | --- | --- | 0.222 | U | --- | --- | 0.253 | U | --- | --- | 0.288 | U | --- | --- | --- | --- | 1.31 | U, D |
| 2,4-DB | mg/kg | --- | --- | 0.224 | U | --- | --- | 0.256 | U | --- | --- | 0.291 | U | --- | --- | --- | --- | 1.33 | U, D |
| Dalapon | mg/kg | --- | --- | 0.215 | U | --- | --- | 0.245 | U | --- | --- | 0.279 | U | --- | --- | --- | --- | 1.27 | U, D |
| Dicamba | mg/kg | --- | --- | 0.248 | LC, P | --- | --- | 0.146 | P, LC | --- | --- | 0.115 | LC, P | --- | --- | --- | --- | 0.263 | U, D |
| Dichlorprop | mg/kg | --- | --- | 0.340 | LC, P | --- | --- | 0.253 | U | --- | --- | 0.288 | U | --- | --- | --- | --- | 1.31 | U, D |
| Dinoseb | mg/kg | --- | --- | 0.224 | U | --- | --- | 0.256 | U | --- | --- | 0.291 | U | --- | --- | --- | --- | 1.33 | U, D |
| MCPA | mg/kg | --- | --- | 11 | U | --- | --- | 12.5 | U | --- | --- | 14.2 | U | --- | --- | --- | --- | 65 | U, D |
| MCPP | mg/kg | --- | --- | 11.1 | # | --- | --- | 12.6 | # | --- | --- | 14.4 | # | --- | --- | --- | --- | 65.7 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | 7.70 | - | --- | --- | 7.08 | - | --- | --- | 7.07 | - | --- | --- | --- | --- | 7.63 | - |
| Flashpoint | °F | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- | 200 | > |
| Percent Moisture | % | --- | --- | 63 | - | --- | --- | 65 | - | --- | --- | 67 | - | --- | --- | --- | --- | 66 | - |
| Reactive Cyanide | mg/kg | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | 2 | U |
| Reactive Sulfide | mg/kg | --- | --- | 7.0 | - | --- | --- | 18.8 | - | --- | --- | 2 | U | --- | --- | --- | --- | 7.9 | - |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.115 | - | --- | --- | --- | --- | 0.05 | U |
| Barium | mg/L | --- | --- | 0.091 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | --- | --- | 0.05 | U |
| Cadmium | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | 0.01 | U |
| Chromium | mg/L | --- | --- | 0.02 | U | --- | --- | 0.026 | - | --- | --- | 0.027 | - | --- | --- | --- | --- | 0.023 | - |
| Lead | mg/L | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | --- | --- | 0.05 | U |
| Mercury | mg/L | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | --- | --- | 0.0005 | U |
| Selenium | mg/L | --- | --- | 0.1 | U | --- | --- | 0.25 | U, D | --- | --- | 0.25 | U, D | --- | --- | --- | --- | 0.25 | U, D |
| Silver | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709502-19 | | 1709502-20 | | 1709502-21 | | 1709502-22 | | 1709502-23 | | 1709502-24 | | 1709502-25 | | 1709502-26 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-36 (5_7-7_6') | | SED-C-3 (0-2_0') - Dried | | SED-C-80 (0-2_0') - Dried | | SED-C-44 (0-0_7') - Dried | | SED-C-45 (0-7_9') - Dried | | SED-C-47 (0-8_1') - Dried | | SED-C-46 (0-8_0') - Dried | | SED-C-35 (0-8_6') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.0073** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | **0.364** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 0.0498 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.0182** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | **0.0073** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-19 | | 1709502-20 | | 1709502-21 | | 1709502-22 | | 1709502-23 | | 1709502-24 | | 1709502-25 | | 1709502-26 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-36 (5_7-7_6') | | SED-C-3 (0-2_0') - Dried | | SED-C-80 (0-2_0') - Dried | | SED-C-44 (0-0_7') - Dried | | SED-C-45 (0-7_9') - Dried | | SED-C-47 (0-8_1') - Dried | | SED-C-46 (0-8_0') - Dried | | SED-C-35 (0-8_6') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Diethyl Ether | mg/kg | 0.0271 | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.0182** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 0.0182 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 0.0364 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-19 | | 1709502-20 | | 1709502-21 | | 1709502-22 | | 1709502-23 | | 1709502-24 | | 1709502-25 | | 1709502-26 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-36 (5_7-7_6') | | SED-C-3 (0-2_0') - Dried | | SED-C-80 (0-2_0') - Dried | | SED-C-44 (0-0_7') - Dried | | SED-C-45 (0-7_9') - Dried | | SED-C-47 (0-8_1') - Dried | | SED-C-46 (0-8_0') - Dried | | SED-C-35 (0-8_6') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-19 | | 1709502-20 | | 1709502-21 | | 1709502-22 | | 1709502-23 | | 1709502-24 | | 1709502-25 | | 1709502-26 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-36 (5_7-7_6') | | SED-C-3 (0-2_0') - Dried | | SED-C-80 (0-2_0') - Dried | | SED-C-44 (0-0_7') - Dried | | SED-C-45 (0-7_9') - Dried | | SED-C-47 (0-8_1') - Dried | | SED-C-46 (0-8_0') - Dried | | SED-C-35 (0-8_6') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-19 | | 1709502-20 | | 1709502-21 | | 1709502-22 | | 1709502-23 | | 1709502-24 | | 1709502-25 | | 1709502-26 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-36 (5_7-7_6') | | SED-C-3 (0-2_0') - Dried | | SED-C-80 (0-2_0') - Dried | | SED-C-44 (0-0_7') - Dried | | SED-C-45 (0-7_9') - Dried | | SED-C-47 (0-8_1') - Dried | | SED-C-46 (0-8_0') - Dried | | SED-C-35 (0-8_6') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | **106** | - | **121** | - | **119** | - | **137** | - | **127** | - | **105** | - | **90.1** | - |
| Barium | mg/kg | --- | --- | 59.1 | - | 35.6 | - | 75.8 | - | 74.9 | - | 67.1 | - | 72.1 | - | 105 | - |
| Cadmium | mg/kg | --- | --- | 1.12 | - | 0.51 | - | 1.75 | - | 2.37 | - | 2.17 | - | 2.08 | - | 1.22 | - |
| Chromium | mg/kg | --- | --- | 78.1 | - | **101** | - | 99.3 | - | **118** | - | 99.2 | - | 97.5 | - | **101** | - |
| Lead | mg/kg | --- | --- | **418** | - | 163 | - | **416** | - | **507** | - | **452** | - | **387** | - | **358** | - |
| Mercury | mg/kg | --- | --- | 1.55 | D | 1.01 | D | 2.83 | D | 3.29 | D | 2.41 | D | 1.18 | D | 3.07 | D |
| Selenium | mg/kg | --- | --- | 46.9 | EL, U, D | 35.8 | EL, U, D | 42.2 | EL, U, D | 44.2 | EL, U, D | 44.8 | EL, U, D | 48.1 | EL, U, D | 46.5 | EL, U, D |
| Silver | mg/kg | --- | --- | 1.17 | - | 1.28 | - | 1.92 | - | 2.37 | - | 1.85 | - | 2.22 | - | 3.40 | - |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709502-19 | | 1709502-20 | | 1709502-21 | | 1709502-22 | | 1709502-23 | | 1709502-24 | | 1709502-25 | | 1709502-26 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-36 (5_7-7_6') | | SED-C-3 (0-2_0') - Dried | | SED-C-80 (0-2_0') - Dried | | SED-C-44 (0-0_7') - Dried | | SED-C-45 (0-7_9') - Dried | | SED-C-47 (0-8_1') - Dried | | SED-C-46 (0-8_0') - Dried | | SED-C-35 (0-8_6') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709502-27 | | 1709502-28 | |
| Sample Designation | | SED-C-37 (0-7_9') - Dried | | SED-C-36 (0-9_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | |
| Soil Type | | | | | |
| Group Designation | | | | | |
| **VOCs - Low** | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- |

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709502-27 | | 1709502-28 | |
| Sample Designation | | SED-C-37 (0-7_9') - Dried | | SED-C-36 (0-9_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | |
| Soil Type | | | | | |
| Group Designation | | | | | |
| Diethyl Ether | mg/kg | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- |
| **VOCs** | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- |

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709502-27 | | 1709502-28 | |
| Sample Designation | | SED-C-37 (0-7_9') - Dried | | SED-C-36 (0-9_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | |
| Soil Type | | | | | |
| Group Designation | | | | | |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- |

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709502-27 | | 1709502-28 | |
| Sample Designation | | SED-C-37 (0-7_9') - Dried | | SED-C-36 (0-9_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | |
| Soil Type | | | | | |
| Group Designation | | | | | |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- |
| **SVOCs** | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- |

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709502-27 | | 1709502-28 | |
| Sample Designation | | SED-C-37 (0-7_9') - Dried | | SED-C-36 (0-9_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | |
| Soil Type | | | | | |
| Group Designation | | | | | |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- |
| **Total Metals** | | | | | |
| Arsenic | mg/kg | **116** | - | **113** | - |
| Barium | mg/kg | 103 | - | 83.8 | - |
| Cadmium | mg/kg | 1.81 | - | 1.87 | - |
| Chromium | mg/kg | **105** | - | 100 | - |
| Lead | mg/kg | **398** | - | **469** | - |
| Mercury | mg/kg | 5.48 | D | 2.59 | D |
| Selenium | mg/kg | 46.7 | EL, U, D | 46.2 | EL, U, D |
| Silver | mg/kg | 3.83 | - | 3.40 | - |
| **Pesticides** | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- |

| | | | | | |
|---|---|---|---|---|---|
| Laboratory Sample Designation | | 1709502-27 | | 1709502-28 | |
| Sample Designation | | SED-C-37 (0-7_9') - Dried | | SED-C-36 (0-9_5') - Dried | |
| Sample Date | | 09/18/2017 | | 09/18/2017 | |
| Sample Depth | | | | | |
| Soil Type | | | | | |
| Group Designation | | | | | |
| Heptachlor | mg/kg | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- |
| **PCBs** | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- |
| **Herbicides** | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- |
| **TCLP Metals** | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-01 | | 1709556-02 | | 1709556-03 | | 1709556-04 | | 1709556-05 | | 1709556-06 | | 1709556-07 | | 1709556-08 | | 1709556-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-66 (6_18-8_24') | | SED-C-69 (0-3_5') | | SED-G-69 (2_1-2_8') | | SED-C-68 (0-3_1') | | SED-G-68 (3_1-4_16') | | SED-C-77 (0-6_4') | | SED-G-77 (3_84-5_12') | | SED-C-76 (0-7_7') | | SED-G-76 (3_08-4_62') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0062 | - | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,1,1-Trichloroethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | 0.0047 | U | --- | --- | 0.0023 | U | --- | --- | 0.0017 | U | --- | --- | **0.0074** | U | --- | --- | **0.0099** | U |
| 1,1,2-Trichloroethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,1-Dichloroethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,1-Dichloroethene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,1-Dichloropropene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2,3-Trichlorobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2,3-Trichloropropane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2,4-Trichlorobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2,4-Trimethylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2-Dibromoethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2-Dichlorobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2-Dichloroethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,2-Dichloropropane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,3,5-Trimethylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,3-Dichlorobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,3-Dichloropropane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,4-Dichlorobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 1,4-Dioxane | mg/kg | **0.233** | U | --- | --- | 0.115 | U | --- | --- | 0.0827 | U | --- | --- | **0.371** | U | --- | --- | **0.494** | U |
| 2,2-Dichloropropane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 2-Butanone | mg/kg | 0.0233 | U | --- | --- | 0.0260 | - | --- | --- | 0.0083 | U | --- | --- | 0.0635 | - | --- | --- | 0.146 | - |
| 2-Chlorotoluene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.345 | - | --- | --- | 0.0247 | U |
| 2-Hexanone | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| 4-Chlorotoluene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0368 | - | --- | --- | 0.0247 | U |
| 4-Isopropyltoluene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0084 | - | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| 4-Methyl-2-Pentanone | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| Acetone | mg/kg | 0.168 | - | --- | --- | 0.182 | - | --- | --- | 0.0517 | - | --- | --- | 0.423 | - | --- | --- | 1.14 | - |
| Benzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Bromobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Bromochloromethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Bromodichloromethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Bromoform | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Bromomethane | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| Carbon Disulfide | mg/kg | 0.0248 | - | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Carbon Tetrachloride | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Chlorobenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Chloroethane | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| Chloroform | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Chloromethane | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| cis-1,2-Dichloroethene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| cis-1,3-Dichloropropene | mg/kg | **0.0117** | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | **0.0186** | U | --- | --- | **0.0247** | U |
| Dibromochloromethane | mg/kg | 0.0047 | U | --- | --- | 0.0023 | U | --- | --- | 0.0017 | U | --- | --- | **0.0074** | U | --- | --- | **0.0099** | U |
| Dibromomethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Dichlorodifluoromethane | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |

| Laboratory Sample Designation | | 1709556-01 | | 1709556-02 | | 1709556-03 | | 1709556-04 | | 1709556-05 | | 1709556-06 | | 1709556-07 | | 1709556-08 | | 1709556-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-66 (6_18-8_24') | | SED-C-69 (0-3_5') | | SED-G-69 (2_1-2_8') | | SED-C-68 (0-3_1') | | SED-G-68 (3_1-4_16') | | SED-C-77 (0-6_4') | | SED-G-77 (3_84-5_12') | | SED-C-76 (0-7_7') | | SED-G-76 (3_08-4_62') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Diethyl Ether | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Di-isopropyl ether | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Ethyl tertiary-butyl ether | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Ethylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Hexachlorobutadiene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Isopropylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0072 | - | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Methyl tert-Butyl Ether | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Methylene Chloride | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| Naphthalene | mg/kg | 0.0117 | U | --- | --- | 0.0119 | - | --- | --- | 0.0046 | - | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| n-Butylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| n-Propylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| sec-Butylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Styrene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| tert-Butylbenzene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Tertiary-amyl methyl ether | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Tetrachloroethene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Tetrahydrofuran | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Toluene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| trans-1,2-Dichloroethene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| trans-1,3-Dichloropropene | mg/kg | **0.0117** | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | **0.0186** | U | --- | --- | **0.0247** | U |
| Trichloroethene | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Trichlorofluoromethane | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Vinyl Chloride | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| Xylene O | mg/kg | 0.0117 | U | --- | --- | 0.0057 | U | --- | --- | 0.0041 | U | --- | --- | 0.0186 | U | --- | --- | 0.0247 | U |
| Xylene P,M | mg/kg | 0.0233 | U | --- | --- | 0.0115 | U | --- | --- | 0.0083 | U | --- | --- | 0.0371 | U | --- | --- | 0.0494 | U |
| **VOCs** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 3.96 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-01 | | 1709556-02 | | 1709556-03 | | 1709556-04 | | 1709556-05 | | 1709556-06 | | 1709556-07 | | 1709556-08 | | 1709556-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-66 (6_18-8_24') | | SED-C-69 (0-3_5') | | SED-G-69 (2_1-2_8') | | SED-C-68 (0-3_1') | | SED-G-68 (3_1-4_16') | | SED-C-77 (0-6_4') | | SED-G-77 (3_84-5_12') | | SED-C-76 (0-7_7') | | SED-G-76 (3_08-4_62') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 1,4-Dioxane - Screen | mg/kg | **159** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 3.96 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 3.96 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | **3.96** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 3.96 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | **1.59** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 3.96 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-01 | | 1709556-02 | | 1709556-03 | | 1709556-04 | | 1709556-05 | | 1709556-06 | | 1709556-07 | | 1709556-08 | | 1709556-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-66 (6_18-8_24') | | SED-C-69 (0-3_5') | | SED-G-69 (2_1-2_8') | | SED-C-68 (0-3_1') | | SED-G-68 (3_1-4_16') | | SED-C-77 (0-6_4') | | SED-G-77 (3_84-5_12') | | SED-C-76 (0-7_7') | | SED-G-76 (3_08-4_62') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | **0.793** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 0.793 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 1.59 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | 0.848 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | 2.68 | U | --- | --- | 2.73 | U | --- | --- | 2.09 | U | --- | --- | **4.25** | U | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | 0.268 | U | --- | --- | 0.273 | U | --- | --- | 0.524 | U | --- | --- | 1.7 | U | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | 1.07 | U | --- | --- | 1.09 | U | --- | --- | 2.09 | U | --- | --- | 1.7 | U | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | 0.268 | U | --- | --- | 0.273 | U | --- | --- | 0.524 | U | --- | --- | **1.7** | U | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | 2.68 | U | --- | --- | 2.73 | U | --- | --- | 5.24 | U | --- | --- | 4.25 | U | --- | --- |
| Acenaphthene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | 0.848 | U | --- | --- |
| Acetophenone | mg/kg | --- | --- | 1.07 | U | --- | --- | 1.09 | U | --- | --- | 2.09 | U | --- | --- | 1.7 | U | --- | --- |
| Aniline | mg/kg | --- | --- | 2.68 | U | --- | --- | 2.73 | U | --- | --- | 5.24 | U | --- | --- | 4.25 | U | --- | --- |
| Anthracene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Azobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | 0.268 | U | --- | --- | 0.273 | U | --- | --- | 0.524 | U | --- | --- | 0.425 | U | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | 3.38 | - | --- | --- | 1.64 | - | --- | --- | **586** | D | --- | --- | **193** | D | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Chrysene | mg/kg | --- | --- | 0.268 | U | --- | --- | 0.273 | U | --- | --- | 0.524 | U | --- | --- | 0.425 | U | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | 0.268 | U | --- | --- | 0.273 | U | --- | --- | 0.524 | U | --- | --- | 0.425 | U | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |

| Laboratory Sample Designation | | 1709556-01 | | 1709556-02 | | 1709556-03 | | 1709556-04 | | 1709556-05 | | 1709556-06 | | 1709556-07 | | 1709556-08 | | 1709556-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-66 (6_18-8_24') | | SED-C-69 (0-3_5') | | SED-G-69 (2_1-2_8') | | SED-C-68 (0-3_1') | | SED-G-68 (3_1-4_16') | | SED-C-77 (0-6_4') | | SED-G-77 (3_84-5_12') | | SED-C-76 (0-7_7') | | SED-G-76 (3_08-4_62') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dimethylphthalate | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | **1.04** | U | --- | --- | **0.848** | U | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 10.3 | - | --- | --- | 28.8 | D | --- | --- |
| Fluoranthene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Fluorene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | **0.848** | U | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Isophorone | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | 2.68 | U | --- | --- | 2.73 | U | --- | --- | 2.09 | U | --- | --- | **4.25** | U | --- | --- |
| Phenanthrene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Phenol | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 0.524 | U | --- | --- | 0.848 | U | --- | --- |
| Pyrene | mg/kg | --- | --- | 0.534 | U | --- | --- | 0.544 | U | --- | --- | 1.04 | U | --- | --- | 0.848 | U | --- | --- |
| Pyridine | mg/kg | --- | --- | 2.68 | U | --- | --- | 2.73 | U | --- | --- | 5.24 | U | --- | --- | 4.25 | U | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0335 | - | --- | --- | 0.0115 | - | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0447 | - | --- | --- | 0.0199 | - | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Aldrin | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| alpha-BHC | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| beta-BHC | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | 0.0328 | U | --- | --- | 0.0322 | U | --- | --- | 0.0816 | U | --- | --- | 0.0513 | U | --- | --- |
| delta-BHC | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Dieldrin | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0215 | LC, P | --- | --- | 0.0141 | - | --- | --- |
| Endosulfan I | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Endosulfan II | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Endrin | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | 0.0025 | U | --- | --- | 0.0024 | U | --- | --- | **0.0061** | U | --- | --- | **0.0038** | U | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |

| Laboratory Sample Designation | | 1709556-01 | | 1709556-02 | | 1709556-03 | | 1709556-04 | | 1709556-05 | | 1709556-06 | | 1709556-07 | | 1709556-08 | | 1709556-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-66 (6_18-8_24') | | SED-C-69 (0-3_5') | | SED-G-69 (2_1-2_8') | | SED-C-68 (0-3_1') | | SED-G-68 (3_1-4_16') | | SED-C-77 (0-6_4') | | SED-G-77 (3_84-5_12') | | SED-C-76 (0-7_7') | | SED-G-76 (3_08-4_62') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Heptachlor | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Methoxychlor | mg/kg | --- | --- | 0.0041 | U | --- | --- | 0.004 | U | --- | --- | 0.0102 | U | --- | --- | 0.0064 | U | --- | --- |
| Toxaphene | mg/kg | --- | --- | 0.205 | U | --- | --- | 0.201 | U | --- | --- | 0.51 | U | --- | --- | 0.321 | U | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | 0.1 | - | --- | --- | 0.1 | - | --- | --- | **1.5** | - | --- | --- | 0.6 | - | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | 0.5 | - | --- | --- | **1.2** | - | --- | --- | **2.7** | - | --- | --- | 0.9 | - | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | 0.1 | - | --- | --- | 0.1 | - | --- | --- | 0.7 | - | --- | --- | 0.2 | - | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | 0.032 | U | --- | --- | 0.202 | LC, P | --- | --- | 0.08 | U | --- | --- | 0.046 | U | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | 0.123 | LC, P | --- | --- | 0.028 | U | --- | --- | 0.163 | - | --- | --- | 0.160 | LC, P | --- | --- |
| 2,4-D | mg/kg | --- | --- | 0.157 | U | --- | --- | 0.139 | U | --- | --- | 0.395 | U | --- | --- | 0.228 | U | --- | --- |
| 2,4-DB | mg/kg | --- | --- | 0.158 | U | --- | --- | 0.14 | U | --- | --- | 0.399 | U | --- | --- | 0.23 | U | --- | --- |
| Dalapon | mg/kg | --- | --- | 0.152 | U | --- | --- | 0.135 | U | --- | --- | 0.383 | U | --- | --- | 0.22 | U | --- | --- |
| Dicamba | mg/kg | --- | --- | 0.206 | LC, P | --- | --- | 0.029 | LC, P | --- | --- | 0.838 | LC, P, D | --- | --- | 0.288 | LC, P | --- | --- |
| Dichlorprop | mg/kg | --- | --- | 0.253 | LC, P | --- | --- | 0.782 | LC, P | --- | --- | 0.395 | U | --- | --- | 0.228 | U | --- | --- |
| Dinoseb | mg/kg | --- | --- | 0.158 | U | --- | --- | 0.14 | U | --- | --- | 0.399 | U | --- | --- | 0.23 | LC, P, U | --- | --- |
| MCPA | mg/kg | --- | --- | 7.75 | U | --- | --- | 6.87 | # | --- | --- | 19.5 | U | --- | --- | 11.3 | # | --- | --- |
| MCPP | mg/kg | --- | --- | 7.83 | # | --- | --- | 6.95 | # | --- | --- | 19.8 | # | --- | --- | 11.4 | # | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | 6.09 | - | --- | --- | 7.48 | - | --- | --- | 6.27 | - | --- | --- | 6.08 | - | --- | --- |
| Flashpoint | °F | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- |
| Percent Moisture | % | --- | --- | 40 | - | --- | --- | 40 | - | --- | --- | 76 | - | --- | --- | 62 | - | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | 2 | U | --- | --- | 2.4 | - | --- | --- | 2 | U | --- | --- | 30.4 | - | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | 3.88 | - | --- | --- | 0.654 | - | --- | --- | 0.126 | - | --- | --- | 0.05 | U | --- | --- |
| Barium | mg/L | --- | --- | 0.050 | - | --- | --- | 0.056 | - | --- | --- | 0.05 | U | --- | --- | 0.119 | - | --- | --- |
| Cadmium | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |
| Chromium | mg/L | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.052 | - | --- | --- | 0.024 | - | --- | --- |
| Lead | mg/L | --- | --- | 0.092 | - | --- | --- | 0.05 | U | --- | --- | 0.067 | - | --- | --- | 0.05 | U | --- | --- |
| Mercury | mg/L | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- |
| Selenium | mg/L | --- | --- | 0.05 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Silver | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709556-10 | | 1709556-11 | | 1709556-12 | | 1709556-13 | | 1709556-14 | | 1709556-15 | | 1709556-16 | | 1709556-17 | | 1709556-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-75 (0-2_1') | | SED-G-75 (1_26-1_68') | | SED-C-74 (0-5_7') | | SED-G-74 (4_56-5_7') | | SED-C-73 (0-1_7') | | SED-G-73 (0_34-0_68') | | SED-C-72 (0-1_9') | | SED-G-72 (0_76-1_14') | | SED-C-69 (0-3_5') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.0019 | U | --- | --- | 0.0017 | U | --- | --- | 0.0014 | U | --- | --- | 0.0023 | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | 0.0948 | U | --- | --- | 0.0837 | U | --- | --- | 0.0694 | U | --- | --- | 0.115 | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 2-Butanone | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0084 | - | --- | --- | 0.0128 | - | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| Acetone | mg/kg | --- | --- | 0.0197 | - | --- | --- | 0.0084 | U | --- | --- | 0.0624 | - | --- | --- | 0.0973 | - | --- | --- |
| Benzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Bromoform | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Bromomethane | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 0.0056 | - | --- | --- | 0.0046 | - | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Chloroethane | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| Chloroform | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Chloromethane | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | 0.0019 | U | --- | --- | 0.0017 | U | --- | --- | 0.0014 | U | --- | --- | 0.0023 | U | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |

| Laboratory Sample Designation | | 1709556-10 | | 1709556-11 | | 1709556-12 | | 1709556-13 | | 1709556-14 | | 1709556-15 | | 1709556-16 | | 1709556-17 | | 1709556-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-75 (0-2_1') | | SED-G-75 (1_26-1_68') | | SED-C-74 (0-5_7') | | SED-G-74 (4_56-5_7') | | SED-C-73 (0-1_7') | | SED-G-73 (0_34-0_68') | | SED-C-72 (0-1_9') | | SED-G-72 (0_76-1_14') | | SED-C-69 (0-3_5') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Diethyl Ether | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Styrene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Toluene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Trichloroethene | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| Xylene O | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0042 | U | --- | --- | 0.0035 | U | --- | --- | 0.0058 | U | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 0.0095 | U | --- | --- | 0.0084 | U | --- | --- | 0.0069 | U | --- | --- | 0.0115 | U | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-10 | | 1709556-11 | | 1709556-12 | | 1709556-13 | | 1709556-14 | | 1709556-15 | | 1709556-16 | | 1709556-17 | | 1709556-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-75 (0-2_1') | | SED-G-75 (1_26-1_68') | | SED-C-74 (0-5_7') | | SED-G-74 (4_56-5_7') | | SED-C-73 (0-1_7') | | SED-G-73 (0_34-0_68') | | SED-C-72 (0-1_9') | | SED-G-72 (0_76-1_14') | | SED-C-69 (0-3_5') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-10 | | 1709556-11 | | 1709556-12 | | 1709556-13 | | 1709556-14 | | 1709556-15 | | 1709556-16 | | 1709556-17 | | 1709556-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-75 (0-2_1') | | SED-G-75 (1_26-1_68') | | SED-C-74 (0-5_7') | | SED-G-74 (4_56-5_7') | | SED-C-73 (0-1_7') | | SED-G-73 (0_34-0_68') | | SED-C-72 (0-1_9') | | SED-G-72 (0_76-1_14') | | SED-C-69 (0-3_5') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 2.42 | U | --- | --- | 2.53 | U | --- | --- | 2.22 | U | --- | --- | 2.68 | U | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.966 | U | --- | --- | 0.253 | U | --- | --- | 0.886 | U | --- | --- | 0.268 | U | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 0.966 | U | --- | --- | 1.01 | U | --- | --- | 0.886 | U | --- | --- | 1.07 | U | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | 0.966 | U | --- | --- | 0.253 | U | --- | --- | 0.886 | U | --- | --- | 0.268 | U | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | 2.42 | U | --- | --- | 2.53 | U | --- | --- | 2.22 | U | --- | --- | 2.68 | U | --- | --- | --- | --- |
| Acenaphthene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Acetophenone | mg/kg | 0.966 | U | --- | --- | 1.01 | U | --- | --- | 0.886 | U | --- | --- | 1.07 | U | --- | --- | --- | --- |
| Aniline | mg/kg | 2.42 | U | --- | --- | 2.53 | U | --- | --- | 2.22 | U | --- | --- | 2.68 | U | --- | --- | --- | --- |
| Anthracene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Azobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | 0.482 | U | --- | --- | 0.543 | - | --- | --- | 0.443 | U | --- | --- | 0.611 | - | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | 0.242 | U | --- | --- | 0.725 | - | --- | --- | 0.222 | U | --- | --- | 0.579 | - | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 0.482 | U | --- | --- | 0.945 | - | --- | --- | 0.443 | U | --- | --- | 0.765 | - | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 0.482 | U | --- | --- | 0.537 | - | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | 0.482 | U | --- | --- | **175** | D | --- | --- | 2.18 | - | --- | --- | 2.74 | - | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Chrysene | mg/kg | 0.242 | U | --- | --- | 0.735 | - | --- | --- | 0.295 | - | --- | --- | 0.646 | - | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.242 | U | --- | --- | 0.253 | U | --- | --- | 0.222 | U | --- | --- | 0.268 | U | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-10 | | 1709556-11 | | 1709556-12 | | 1709556-13 | | 1709556-14 | | 1709556-15 | | 1709556-16 | | 1709556-17 | | 1709556-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-75 (0-2_1') | | SED-G-75 (1_26-1_68') | | SED-C-74 (0-5_7') | | SED-G-74 (4_56-5_7') | | SED-C-73 (0-1_7') | | SED-G-73 (0_34-0_68') | | SED-C-72 (0-1_9') | | SED-G-72 (0_76-1_14') | | SED-C-69 (0-3_5') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dimethylphthalate | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | 0.482 | U | --- | --- | 2.38 | - | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Fluoranthene | mg/kg | 0.482 | U | --- | --- | 0.676 | - | --- | --- | 0.443 | U | --- | --- | 0.781 | - | --- | --- | --- | --- |
| Fluorene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Isophorone | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 2.42 | U | --- | --- | 2.53 | U | --- | --- | 2.22 | U | --- | --- | 2.68 | U | --- | --- | --- | --- |
| Phenanthrene | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Phenol | mg/kg | 0.482 | U | --- | --- | 0.505 | U | --- | --- | 0.443 | U | --- | --- | 0.534 | U | --- | --- | --- | --- |
| Pyrene | mg/kg | 0.482 | U | --- | --- | 0.973 | - | --- | --- | 0.443 | U | --- | --- | 0.865 | - | --- | --- | --- | --- |
| Pyridine | mg/kg | 2.42 | U | --- | --- | 2.53 | U | --- | --- | 2.22 | U | --- | --- | 2.68 | U | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **477** | - |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 31.9 | - |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.51 | U, D |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 32.3 | - |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **235** | - |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 2.35 | D |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 5.03 | U |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.5 | U |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0065 | - | --- | --- | 0.0067 | - | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Aldrin | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| alpha-BHC | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| beta-BHC | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.0299 | U | --- | --- | 0.0303 | U | --- | --- | 0.0265 | U | --- | --- | 0.0329 | U | --- | --- | --- | --- |
| delta-BHC | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Dieldrin | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Endosulfan I | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Endosulfan II | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Endrin | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.0022 | U | --- | --- | 0.0023 | U | --- | --- | 0.002 | U | --- | --- | 0.0025 | U | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-10 | | 1709556-11 | | 1709556-12 | | 1709556-13 | | 1709556-14 | | 1709556-15 | | 1709556-16 | | 1709556-17 | | 1709556-18 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-75 (0-2_1') | | SED-G-75 (1_26-1_68') | | SED-C-74 (0-5_7') | | SED-G-74 (4_56-5_7') | | SED-C-73 (0-1_7') | | SED-G-73 (0_34-0_68') | | SED-C-72 (0-1_9') | | SED-G-72 (0_76-1_14') | | SED-C-69 (0-3_5') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Heptachlor | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 0.0037 | U | --- | --- | 0.0038 | U | --- | --- | 0.0033 | U | --- | --- | 0.0041 | U | --- | --- | --- | --- |
| Toxaphene | mg/kg | 0.187 | U | --- | --- | 0.189 | U | --- | --- | 0.165 | U | --- | --- | 0.206 | U | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | 0.08 | U | --- | --- | 0.2 | - | --- | --- | 0.07 | U | --- | --- | 0.1 | - | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | 0.08 | U | --- | --- | 0.6 | - | --- | --- | 0.5 | - | --- | --- | 0.4 | - | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | 0.08 | U | --- | --- | 0.2 | - | --- | --- | 0.2 | - | --- | --- | 0.1 | - | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | 0.08 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.025 | U | --- | --- | 0.141 | U, D | --- | --- | 0.026 | U | --- | --- | 0.031 | U | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.025 | U | --- | --- | 0.458 | LC, P, D | --- | --- | 0.026 | U | --- | --- | 0.031 | U | --- | --- | --- | --- |
| 2,4-D | mg/kg | 0.123 | U | --- | --- | 0.699 | U, D | --- | --- | 0.13 | U | --- | --- | 0.155 | U | --- | --- | --- | --- |
| 2,4-DB | mg/kg | 0.125 | U | --- | --- | 0.706 | U, D | --- | --- | 0.131 | U | --- | --- | 0.156 | U | --- | --- | --- | --- |
| Dalapon | mg/kg | 0.119 | U | --- | --- | 0.676 | U, D | --- | --- | 0.126 | U | --- | --- | 0.15 | U | --- | --- | --- | --- |
| Dicamba | mg/kg | 0.025 | U | --- | --- | 0.486 | LC, P, D | --- | --- | 0.113 | - | --- | --- | 0.090 | LC, P | --- | --- | --- | --- |
| Dichlorprop | mg/kg | 0.123 | U | --- | --- | 0.699 | U, D | --- | --- | 0.13 | U | --- | --- | 0.155 | U | --- | --- | --- | --- |
| Dinoseb | mg/kg | 0.125 | U | --- | --- | 0.706 | U, D | --- | --- | 0.131 | U | --- | --- | 0.156 | U | --- | --- | --- | --- |
| MCPA | mg/kg | 6.11 | U | --- | --- | 34.6 | # | --- | --- | 6.43 | U | --- | --- | 7.65 | # | --- | --- | --- | --- |
| MCPP | mg/kg | 6.17 | # | --- | --- | 34.9 | # | --- | --- | 6.50 | # | --- | --- | 7.74 | # | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 6.98 | - | --- | --- | 6.92 | - | --- | --- | 7.50 | - | --- | --- | 7.09 | - | --- | --- | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- |
| Percent Moisture | % | 33 | - | --- | --- | 35 | - | --- | --- | 28 | - | --- | --- | 40 | - | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | 2.1 | - | --- | --- | 2 | U | --- | --- | 17.8 | - | --- | --- | 13.9 | - | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.072 | - | --- | --- | 0.095 | - | --- | --- | 0.142 | - | --- | --- | 0.226 | - | --- | --- | --- | --- |
| Barium | mg/L | 0.114 | - | --- | --- | 0.070 | - | --- | --- | 0.077 | - | --- | --- | 0.069 | - | --- | --- | --- | --- |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | --- | --- |
| Lead | mg/L | 0.05 | U | --- | --- | 0.304 | - | --- | --- | 0.174 | - | --- | --- | 0.207 | - | --- | --- | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | --- | --- |
| Selenium | mg/L | 0.1 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.25 | U, D | --- | --- | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-19 | | 1709556-20 | | 1709556-21 | | 1709556-22 | | 1709556-23 | | 1709556-24 | | 1709556-25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-68 (0-3_1') Dried | | SED-C-77 (0-6_4') Dried | | SED-C-76 (0-7_7') Dried | | SED-C-75 (0-2_1') Dried | | SED-C-74 (0-5_7') Dried | | SED-C-73 (0-1_7') Dried | | SED-C-72 (0-1_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-19 | | 1709556-20 | | 1709556-21 | | 1709556-22 | | 1709556-23 | | 1709556-24 | | 1709556-25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-68 (0-3_1') Dried | | SED-C-77 (0-6_4') Dried | | SED-C-76 (0-7_7') Dried | | SED-C-75 (0-2_1') Dried | | SED-C-74 (0-5_7') Dried | | SED-C-73 (0-1_7') Dried | | SED-C-72 (0-1_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-19 | | 1709556-20 | | 1709556-21 | | 1709556-22 | | 1709556-23 | | 1709556-24 | | 1709556-25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-68 (0-3_1') Dried | | SED-C-77 (0-6_4') Dried | | SED-C-76 (0-7_7') Dried | | SED-C-75 (0-2_1') Dried | | SED-C-74 (0-5_7') Dried | | SED-C-73 (0-1_7') Dried | | SED-C-72 (0-1_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-19 | | 1709556-20 | | 1709556-21 | | 1709556-22 | | 1709556-23 | | 1709556-24 | | 1709556-25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-68 (0-3_1') Dried | | SED-C-77 (0-6_4') Dried | | SED-C-76 (0-7_7') Dried | | SED-C-75 (0-2_1') Dried | | SED-C-74 (0-5_7') Dried | | SED-C-73 (0-1_7') Dried | | SED-C-72 (0-1_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-19 | | 1709556-20 | | 1709556-21 | | 1709556-22 | | 1709556-23 | | 1709556-24 | | 1709556-25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-68 (0-3_1') Dried | | SED-C-77 (0-6_4') Dried | | SED-C-76 (0-7_7') Dried | | SED-C-75 (0-2_1') Dried | | SED-C-74 (0-5_7') Dried | | SED-C-73 (0-1_7') Dried | | SED-C-72 (0-1_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **224** | - | **249** | - | **67.1** | - | 13.0 | - | **109** | - | **71.2** | - | **95.5** | - |
| Barium | mg/kg | 46.3 | - | 68.1 | - | 33.5 | - | 22.3 | - | 46.1 | - | 32.6 | - | 43.6 | - |
| Cadmium | mg/kg | 0.48 | U | 1.71 | - | 0.54 | - | 0.35 | U | 0.36 | U | 0.47 | U | 0.46 | U |
| Chromium | mg/kg | 37.0 | - | **169** | - | 69.8 | - | 20.6 | - | 38.1 | - | 19.8 | - | 36.7 | - |
| Lead | mg/kg | **239** | - | **392** | - | 152 | - | 15.9 | - | **203** | - | 190 | - | 184 | - |
| Mercury | mg/kg | 1.08 | D | 0.035 | U | 0.760 | D | 0.100 | - | 1.24 | D | 0.815 | D | 0.830 | D |
| Selenium | mg/kg | 4.82 | U | 5.27 | U, D | 4.66 | U, D | 3.51 | U | 3.59 | U | 4.73 | U | 4.61 | U |
| Silver | mg/kg | 0.48 | U | 2.04 | - | 0.94 | - | 0.35 | U | 0.36 | U | 0.47 | U | 0.46 | U |
| **Pesticides** | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709556-19 | | 1709556-20 | | 1709556-21 | | 1709556-22 | | 1709556-23 | | 1709556-24 | | 1709556-25 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-68 (0-3_1') Dried | | SED-C-77 (0-6_4') Dried | | SED-C-76 (0-7_7') Dried | | SED-C-75 (0-2_1') Dried | | SED-C-74 (0-5_7') Dried | | SED-C-73 (0-1_7') Dried | | SED-C-72 (0-1_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0038 | U | --- | --- | 0.0043 | U | --- | --- | **0.0077** | U | --- | --- | **0.0056** | - |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 1,4-Dioxane | mg/kg | --- | --- | **0.235** | U | --- | --- | 0.189 | U | --- | --- | **0.215** | U | --- | --- | **0.387** | U | --- | --- | **0.243** | U |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 2-Butanone | mg/kg | --- | --- | 0.0238 | - | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.247 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.259 | - | --- | --- | 0.0121 | U |
| 2-Hexanone | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0405 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0415 | - | --- | --- | 0.0121 | U |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Acetone | mg/kg | --- | --- | 0.145 | - | --- | --- | 0.102 | - | --- | --- | 0.0315 | - | --- | --- | 0.134 | - | --- | --- | 0.178 | - |
| Benzene | mg/kg | --- | --- | 0.0132 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Bromobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Bromochloromethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Bromodichloromethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Bromoform | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Bromomethane | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Carbon Disulfide | mg/kg | --- | --- | 0.0174 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Chlorobenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Chloroethane | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Chloroform | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Chloromethane | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | **0.0118** | U | --- | --- | 0.0094 | U | --- | --- | **0.0108** | U | --- | --- | **0.0194** | U | --- | --- | **0.0121** | U |
| Dibromochloromethane | mg/kg | --- | --- | 0.0047 | U | --- | --- | 0.0038 | U | --- | --- | 0.0043 | U | --- | --- | **0.0077** | U | --- | --- | 0.0049 | U |
| Dibromomethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Diethyl Ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0250 | - | --- | --- | 0.0194 | U | --- | --- | 0.0161 | - |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Ethylbenzene | mg/kg | --- | --- | 0.0269 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0327 | - | --- | --- | 0.0121 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Isopropylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Methylene Chloride | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Naphthalene | mg/kg | --- | --- | 0.0252 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0359 | - | --- | --- | 0.0121 | U |
| n-Butylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| n-Propylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Styrene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Tetrachloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Toluene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | **0.0118** | U | --- | --- | 0.0094 | U | --- | --- | **0.0108** | U | --- | --- | **0.0194** | U | --- | --- | **0.0121** | U |
| Trichloroethene | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0118 | U | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0194 | U | --- | --- | 0.0121 | U |
| Vinyl Chloride | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Xylene O | mg/kg | --- | --- | 0.0182 | - | --- | --- | 0.0094 | U | --- | --- | 0.0108 | U | --- | --- | 0.0209 | - | --- | --- | 0.0121 | U |
| Xylene P,M | mg/kg | --- | --- | 0.0235 | U | --- | --- | 0.0189 | U | --- | --- | 0.0215 | U | --- | --- | 0.0387 | U | --- | --- | 0.0243 | U |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.982 | - | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2,4-Dimethylphenol | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 1.81 | U | --- | --- | 1.76 | U | --- | --- | 1.89 | U | --- | --- | 1.71 | U | --- | --- | 1.56 | U | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 2-Chloronaphthalene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 2-Chlorophenol | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 2-Methylphenol | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 2-Nitrophenol | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.454 | U | --- | --- | 0.877 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 3+4-Methylphenol | mg/kg | 1.81 | U | --- | --- | 1.76 | U | --- | --- | 1.89 | U | --- | --- | 1.71 | U | --- | --- | 1.56 | U | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| 4-Chloroaniline | mg/kg | 0.454 | U | --- | --- | 0.877 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| 4-Nitrophenol | mg/kg | 4.54 | U | --- | --- | 4.4 | U | --- | --- | 4.74 | U | --- | --- | 4.27 | U | --- | --- | 3.9 | U | --- | --- |
| Acenaphthene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Acenaphthylene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Acetophenone | mg/kg | 1.81 | U | --- | --- | 1.76 | U | --- | --- | 1.89 | U | --- | --- | 1.71 | U | --- | --- | 1.56 | U | --- | --- |
| Aniline | mg/kg | 4.54 | U | --- | --- | 4.4 | U | --- | --- | 4.74 | U | --- | --- | 4.27 | U | --- | --- | 3.9 | U | --- | --- |
| Anthracene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Azobenzene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Benzo(a)anthracene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Benzo(a)pyrene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.633 | - | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | **771** | D | --- | --- | **241** | D | --- | --- | **128** | D | --- | --- | **300** | D | --- | --- | **302** | D | --- | --- |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Chrysene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.719 | - | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| Dibenzofuran | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Diethylphthalate | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Dimethylphthalate | mg/kg | **0.906** | U | --- | --- | **0.877** | U | --- | --- | **0.946** | U | --- | --- | **0.852** | U | --- | --- | **0.777** | U | --- | --- |
| Di-n-butylphthalate | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Di-n-octylphthalate | mg/kg | 52.7 | D | --- | --- | 3.18 | - | --- | --- | 3.41 | - | --- | --- | 30.9 | D | --- | --- | 38.7 | D | --- | --- |
| Fluoranthene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 1.24 | - | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Fluorene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Hexachloroethane | mg/kg | 0.454 | U | --- | --- | 0.44 | U | --- | --- | 0.474 | U | --- | --- | 0.427 | U | --- | --- | 0.39 | U | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Isophorone | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Naphthalene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Nitrobenzene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Pentachlorophenol | mg/kg | 1.81 | U | --- | --- | 1.76 | U | --- | --- | 1.89 | U | --- | --- | 1.71 | U | --- | --- | 1.56 | U | --- | --- |
| Phenanthrene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Phenol | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 0.946 | U | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Pyrene | mg/kg | 0.906 | U | --- | --- | 0.877 | U | --- | --- | 1.27 | - | --- | --- | 0.852 | U | --- | --- | 0.777 | U | --- | --- |
| Pyridine | mg/kg | 4.54 | U | --- | --- | 4.4 | U | --- | --- | 4.74 | U | --- | --- | 4.27 | U | --- | --- | 3.9 | U | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0067 | U | --- | --- | 0.0167 | - | --- | --- | 0.0215 | - | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| 4,4´-DDE | mg/kg | 0.0067 | U | --- | --- | 0.0115 | LC, P | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| 4,4´-DDT | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Aldrin | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| alpha-BHC | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| alpha-Chlordane | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| beta-BHC | mg/kg | 0.0230 | LC, P | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Chlordane (Total) | mg/kg | 0.0539 | U | --- | --- | 0.0524 | U | --- | --- | 0.0601 | U | --- | --- | 0.0526 | U | --- | --- | 0.0464 | U | --- | --- |
| delta-BHC | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Dieldrin | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Endosulfan I | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0141 | LC, P | --- | --- | 0.0113 | LC, P | --- | --- |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Endosulfan II | mg/kg | 0.0113 | LC, P | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0114 | LC, P | --- | --- | 0.0106 | LC, P | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Endrin | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Endrin Ketone | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| gamma-BHC (Lindane) | mg/kg | **0.004** | U | --- | --- | **0.0039** | U | --- | --- | **0.0045** | U | --- | --- | **0.0039** | U | --- | --- | **0.0035** | U | --- | --- |
| gamma-Chlordane | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Heptachlor | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0105 | LC, P | --- | --- | 0.0098 | LC, P | --- | --- | 0.0379 | LC, P | --- | --- | 0.0105 | LC, P | --- | --- | 0.0058 | U | --- | --- |
| Methoxychlor | mg/kg | 0.0067 | U | --- | --- | 0.0066 | U | --- | --- | 0.0075 | U | --- | --- | 0.0066 | U | --- | --- | 0.0058 | U | --- | --- |
| Toxaphene | mg/kg | 0.337 | U | --- | --- | 0.328 | U | --- | --- | 0.376 | U | --- | --- | 0.329 | U | --- | --- | 0.29 | U | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.1 | U | --- | --- | **1.7** | - | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1221 | mg/kg | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1232 | mg/kg | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1242 | mg/kg | **2.4** | - | --- | --- | 0.1 | U | --- | --- | 0.5 | - | --- | --- | **1.6** | - | --- | --- | 0.8 | - | --- | --- |
| Aroclor 1248 | mg/kg | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1254 | mg/kg | **2.4** | - | --- | --- | 0.1 | U | --- | --- | 0.6 | - | --- | --- | **1.4** | - | --- | --- | **1.5** | - | --- | --- |
| Aroclor 1260 | mg/kg | 0.7 | - | --- | --- | **1.2** | - | --- | --- | 0.3 | - | --- | --- | 0.1 | U | --- | --- | 0.4 | P | --- | --- |
| Aroclor 1262 | mg/kg | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| Aroclor 1268 | mg/kg | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.052 | U | --- | --- | 0.048 | U | --- | --- | 0.057 | U | --- | --- | 0.047 | U | --- | --- | 0.044 | U | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.052 | U | --- | --- | 0.048 | U | --- | --- | 0.057 | U | --- | --- | 0.047 | U | --- | --- | 0.103 | LC, P | --- | --- |
| 2,4-D | mg/kg | 0.256 | U | --- | --- | 0.238 | U | --- | --- | 0.281 | U | --- | --- | 0.23 | U | --- | --- | 0.219 | U | --- | --- |
| 2,4-DB | mg/kg | 0.258 | U | --- | --- | 0.241 | U | --- | --- | 0.284 | U | --- | --- | 0.233 | U | --- | --- | 0.222 | U | --- | --- |
| Dalapon | mg/kg | 0.248 | U | --- | --- | 0.23 | U | --- | --- | 0.272 | U | --- | --- | 0.223 | U | --- | --- | 0.212 | U | --- | --- |
| Dicamba | mg/kg | 0.070 | LC, P | --- | --- | 0.177 | LC, P | --- | --- | 0.056 | U | --- | --- | 0.142 | - | --- | --- | 0.126 | LC, P | --- | --- |
| Dichlorprop | mg/kg | 0.256 | U | --- | --- | 0.238 | U | --- | --- | 0.281 | U | --- | --- | 0.23 | U | --- | --- | 0.891 | - | --- | --- |
| Dinoseb | mg/kg | 0.258 | U | --- | --- | 0.241 | U | --- | --- | 0.284 | U | --- | --- | 0.233 | U | --- | --- | 0.222 | U | --- | --- |
| MCPA | mg/kg | 12.6 | U | --- | --- | 11.8 | # | --- | --- | 13.9 | # | --- | --- | 11.4 | # | --- | --- | 10.8 | # | --- | --- |
| MCPP | mg/kg | 12.8 | # | --- | --- | 11.9 | # | --- | --- | 14.1 | # | --- | --- | 11.5 | # | --- | --- | 11.0 | # | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 7.62 | - | --- | --- | 7.46 | - | --- | --- | 7.37 | - | --- | --- | 7.38 | - | --- | --- | 6.60 | - | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- |
| Percent Moisture | % | 63 | - | --- | --- | 62 | - | --- | --- | 67 | - | --- | --- | 62 | - | --- | --- | 57 | - | --- | --- |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- |
| Reactive Sulfide | mg/kg | 2 | U | --- | --- | 399 | - | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 28.7 | - | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- |
| Barium | mg/L | 0.213 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.206 | - | --- | --- | 0.05 | U | --- | --- |
| Cadmium | mg/L | 0.0162 | - | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.0174 | - | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709558-01 | | 1709558-02 | | 1709558-03 | | 1709558-04 | | 1709558-05 | | 1709558-06 | | 1709558-07 | | 1709558-08 | | 1709558-09 | | 1709558-10 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-93 (0-3_3') | | SED-G-93 (2_64-3_3') | | SED-C-94 (0-5_6') | | SED-G-94 (1_12-2_24') | | SED-C-38 (0-8_9') | | SED-G-38 (5_34-7_12') | | SED-C-Dup-3 | | SED-G-Dup-3 | | SED-C-65 (0-7_0') | | SED-G-65 (1_4-2_8') | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | | | |
| Chromium | mg/L | 0.053 | - | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.046 | - | --- | --- | 0.038 | - | --- | --- |
| Lead | mg/L | 0.216 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.196 | - | --- | --- | 0.05 | U | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- |
| Selenium | mg/L | 0.25 | U, D | --- | --- | 0.25 | U, D | --- | --- | 0.1 | U | --- | --- | 0.25 | U, D | --- | --- | 0.25 | U, D | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | **0.006** | U | --- | --- | **0.006** | U | --- | --- | 0.002 | U | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | **11.6** | E | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.921 | E | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | **3.98** | E | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | **0.301** | U | --- | --- | **0.301** | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | 0.144 | - | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | 1.12 | - | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | 0.0410 | - | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 0.0188 | - | --- | --- | 0.0166 | - | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | **7.40** | E | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | **0.0151** | U | --- | --- | **0.015** | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | **0.006** | U | --- | --- | **0.006** | U | --- | --- | 0.002 | U | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | 0.0155 | - | --- | --- | 0.0426 | - | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 0.0407 | - | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 0.0186 | - | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.0176 | - | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 0.0156 | - | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0272 | - | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | **0.0151** | U | --- | --- | **0.015** | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | 0.0151 | U | --- | --- | 0.015 | U | --- | --- | 0.005 | U | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 0.0301 | U | --- | --- | 0.0301 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0075 | U | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | **442** | D | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | **4.60** | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | **23.9** | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | **222** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | **5.55** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | **5.55** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | **55.2** | - | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | **2.22** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 5.55 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Toluene | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | **1.11** | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | 1.11 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 2.22 | U | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | **15.9** | - | --- | --- | 2.10 | - | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.514 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.577 | - | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | **1.10** | - | --- | --- | **0.704** | - | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | 2.05 | U | --- | --- | 1.7 | U | --- | --- | 1.61 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | 2.05 | U | --- | --- | 1.7 | U | --- | --- | 1.61 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | 5.14 | U | --- | --- | 4.26 | U | --- | --- | 4.02 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | 0.514 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | 2.05 | U | --- | --- | 1.7 | U | --- | --- | 1.61 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | 5.14 | U | --- | --- | 4.26 | U | --- | --- | 4.02 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | 0.514 | U | --- | --- | 0.735 | - | --- | --- | 0.490 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 1.02 | U | --- | --- | 1.03 | - | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | 79.6 | D | --- | --- | **205** | D | --- | --- | **203** | D | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | mg/kg | 1.02 | U | --- | --- | 6.71 | - | --- | --- | 1.44 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | 0.514 | U | --- | --- | 0.829 | - | --- | --- | 0.585 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | **1.02** | U | --- | --- | **0.85** | U | --- | --- | **0.801** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | 1.02 | U | --- | --- | 1.82 | - | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | 17.0 | - | --- | --- | 27.2 | D | --- | --- | 21.4 | D | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | 1.02 | U | --- | --- | 1.60 | - | --- | --- | 1.15 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | 0.514 | U | --- | --- | 0.426 | U | --- | --- | 0.402 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | 2.05 | U | --- | --- | 1.7 | U | --- | --- | 1.61 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | 1.02 | U | --- | --- | 0.85 | U | --- | --- | 0.971 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | 0.514 | U | --- | --- | 0.85 | U | --- | --- | 0.801 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | 1.02 | U | --- | --- | 1.37 | - | --- | --- | 1.11 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | 5.14 | U | --- | --- | 4.26 | U | --- | --- | 4.02 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **57.5** | - | **43.8** | - | **89.7** | - |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 79.1 | - | 84.3 | - | 81.6 | - |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.47 | - | 2.45 | - | 2.49 | - |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **143** | - | 99.8 | - | **109** | - |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | **340** | - | **235** | - | **458** | - |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1.23 | D | 0.785 | D | 1.79 | D |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 20.6 | EL, U, D | 19.7 | EL, U, D | 20 | EL, U, D |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.48 | - | 1.49 | - | 2.77 | - |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0076 | U | --- | --- | 0.0313 | - | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | 0.0609 | U | --- | --- | 0.0526 | U | --- | --- | 0.0513 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | 0.0191 | LC, P | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | 0.0084 | LC, P | --- | --- | 0.0141 | LC, P | --- | --- | 0.0116 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Endosulfan II | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0098 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | **0.0046** | U | --- | --- | **0.0039** | U | --- | --- | **0.0038** | U | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0076 | U | --- | --- | 0.0169 | LC, P | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | 0.0076 | U | --- | --- | 0.0066 | U | --- | --- | 0.0064 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | 0.381 | U | --- | --- | 0.329 | U | --- | --- | 0.32 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | 0.6 | - | --- | --- | 0.7 | P | --- | --- | 0.6 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | 1.0 | - | --- | --- | 0.9 | - | --- | --- | **1.8** | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | 0.3 | - | --- | --- | 0.2 | LC, P | --- | --- | 0.4 | P | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | 0.2 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.058 | U | --- | --- | 0.045 | U | --- | --- | 0.048 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.058 | U | --- | --- | 0.045 | U | --- | --- | 0.066 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | 0.289 | U | --- | --- | 0.222 | U | --- | --- | 0.24 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | 0.292 | U | --- | --- | 0.225 | U | --- | --- | 0.242 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | 0.28 | U | --- | --- | 0.215 | U | --- | --- | 0.232 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | 0.067 | - | --- | --- | 0.044 | U | --- | --- | 0.146 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | 0.333 | LC, P | --- | --- | 0.222 | U | --- | --- | 0.276 | LC, P | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | 0.292 | U | --- | --- | 0.225 | U | --- | --- | 0.242 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | 14.3 | U | --- | --- | 11 | U | --- | --- | 11.9 | # | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | 14.5 | # | --- | --- | 11.1 | # | --- | --- | 12.0 | # | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 6.57 | - | --- | --- | 6.29 | - | --- | --- | 7.02 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | 68 | - | --- | --- | 62 | - | --- | --- | 61 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | 2 | U | --- | --- | 9.4 | - | --- | --- | 24.5 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.083 | - | --- | --- | 0.073 | - | --- | --- | 0.185 | - | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | 0.199 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | 0.0119 | - | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-11 | | 1709558-12 | | 1709558-13 | | 1709558-14 | | 1709558-15 | | 1709558-16 | | 1709558-17 | | 1709558-18 | | 1709558-19 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-40 (0-8_9') | | SED-G-40 (1_78-3_56') | | SED-C-39 (0-9_8') | | SED-G-39 (7_84-9_8') | | SED-C-66 (0-10_3') | | Trip Blank-6 | | SED-C-93 (0-3_3') Dried | | SED-C-94 (0-5_6') Dried | | SED-C-38 (0-8_9') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Chromium | mg/L | 0.025 | - | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | 0.399 | - | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | 0.05 | U | --- | --- | 0.1 | U | --- | --- | 0.25 | U, D | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | |
| Arsenic | mg/kg | **49.3** | - | **353** | - | **104** | - | **72.3** | - | **237** | - |
| Barium | mg/kg | 76.6 | - | 75.0 | - | 86.2 | - | 83.1 | - | 88.7 | - |
| Cadmium | mg/kg | 3.12 | - | 1.62 | - | 2.60 | - | 2.07 | - | 1.53 | - |
| Chromium | mg/kg | **140** | - | **111** | - | **113** | - | 89.5 | - | 86.8 | - |
| Lead | mg/kg | **309** | - | **454** | - | **434** | - | **352** | - | **405** | - |
| Mercury | mg/kg | 1.12 | D | 2.87 | D | 4.40 | D | 1.43 | D | 2.13 | D |
| Selenium | mg/kg | 18.9 | EL, U, D | 20.9 | EL, U, D | 18.9 | EL, U, D | 18.6 | EL, U, D | 19.8 | EL, U, D |
| Silver | mg/kg | 3.01 | - | 2.17 | - | 3.34 | - | 3.29 | - | 2.17 | - |
| **Pesticides** | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709558-20 | | 1709558-21 | | 1709558-22 | | 1709558-23 | | 1709558-24 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-Dup-3 Dried | | SED-C-65 (0-7_0') Dried | | SED-C-40 (0-8_9') Dried | | SED-C-39 (0-9_8') Dried | | SED-C-66 (0-10_3') Dried | |
| Sample Date | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | | 09/19/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709627-01 | | 1709627-02 | | 1709627-03 | | 1709627-04 | | 1709627-05 | | 1709627-06 | | 1709627-06RE1 | | 1709627-07 | | 1709627-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70 (0-2_8') | | SED-G-70 (1_12-1_68') | | SED-C-71 (0-1_7') | | SED-G-71 (0_34-0_68') | | SED-C-10 (0-2_9') | | SED-G-10 (0_58-1_16') | | SED-G-10 (0_58-1_16') | | SED-C-72-2 (03_1') | | SED-G-72-2 (2_48-3_1') | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.0023 | U | --- | --- | 0.0023 | U | --- | --- | 0.0043 | U | 0.0043 | U | --- | --- | 0.0026 | U |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0244 | - | 0.0200 | - | --- | --- | 0.0065 | U |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 1,4-Dioxane | mg/kg | --- | --- | 0.115 | U | --- | --- | 0.116 | U | --- | --- | **0.216** | U | **0.213** | U | --- | --- | 0.129 | U |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 2-Butanone | mg/kg | --- | --- | 0.0122 | - | --- | --- | 0.0116 | U | --- | --- | 0.0263 | - | 0.0213 | U | --- | --- | 0.0129 | U |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 2-Hexanone | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Acetone | mg/kg | --- | --- | 0.0696 | - | --- | --- | 0.0633 | - | --- | --- | 0.160 | - | 0.0629 | - | --- | --- | 0.0138 | - |
| Benzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Bromobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Bromochloromethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Bromodichloromethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Bromoform | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Bromomethane | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Carbon Disulfide | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0311 | - | 0.0106 | U | --- | --- | 0.0130 | - |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Chlorobenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0407 | - | 0.0289 | - | --- | --- | 0.0065 | U |
| Chloroethane | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Chloroform | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Chloromethane | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | **0.0108** | U | **0.0106** | U | --- | --- | 0.0065 | U |

| Laboratory Sample Designation | | 1709627-01 | | 1709627-02 | | 1709627-03 | | 1709627-04 | | 1709627-05 | | 1709627-06 | | 1709627-06RE1 | | 1709627-07 | | 1709627-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70 (0-2_8') | | SED-G-70 (1_12-1_68') | | SED-C-71 (0-1_7') | | SED-G-71 (0_34-0_68') | | SED-C-10 (0-2_9') | | SED-G-10 (0_58-1_16') | | SED-G-10 (0_58-1_16') | | SED-C-72-2 (03_1') | | SED-G-72-2 (2_48-3_1') | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | --- | --- | 0.0023 | U | --- | --- | 0.0023 | U | --- | --- | 0.0043 | U | 0.0043 | U | --- | --- | 0.0026 | U |
| Dibromomethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Diethyl Ether | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Di-isopropyl ether | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Ethylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Isopropylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Methylene Chloride | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Naphthalene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| n-Butylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| n-Propylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| sec-Butylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Styrene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| tert-Butylbenzene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Tetrachloroethene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Tetrahydrofuran | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Toluene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | **0.0108** | U | **0.0106** | U | --- | --- | 0.0065 | U |
| Trichloroethene | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Vinyl Chloride | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Xylene O | mg/kg | --- | --- | 0.0058 | U | --- | --- | 0.0058 | U | --- | --- | 0.0108 | U | 0.0106 | U | --- | --- | 0.0065 | U |
| Xylene P,M | mg/kg | --- | --- | 0.0115 | U | --- | --- | 0.0116 | U | --- | --- | 0.0216 | U | 0.0213 | U | --- | --- | 0.0129 | U |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 1.46 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.787 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | **0.787** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | **1.46** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2,4-Dichlorophenol | mg/kg | **0.787** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2,4-Dimethylphenol | mg/kg | **0.787** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2,4-Dinitrophenol | mg/kg | **5.83** | U | --- | --- | 2.46 | U | --- | --- | 1.63 | U | --- | --- | --- | --- | 2.4 | U | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | **1.46** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2-Chloronaphthalene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2-Chlorophenol | mg/kg | **0.875** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |

| Laboratory Sample Designation | | 1709627-01 | | 1709627-02 | | 1709627-03 | | 1709627-04 | | 1709627-05 | | 1709627-06 | | 1709627-06RE1 | | 1709627-07 | | 1709627-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70 (0-2_8') | | SED-G-70 (1_12-1_68') | | SED-C-71 (0-1_7') | | SED-G-71 (0_34-0_68') | | SED-C-10 (0-2_9') | | SED-G-10 (0_58-1_16') | | SED-G-10 (0_58-1_16') | | SED-C-72-2 (03_1') | | SED-G-72-2 (2_48-3_1') | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | mg/kg | **0.726** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2-Methylphenol | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 2-Nitrophenol | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | 0.726 | U | --- | --- | 0.982 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.957 | U | --- | --- |
| 3+4-Methylphenol | mg/kg | 5.83 | U | --- | --- | 0.982 | U | --- | --- | 1.63 | U | --- | --- | --- | --- | 0.957 | U | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| 4-Chloroaniline | mg/kg | 0.726 | U | --- | --- | 0.982 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.957 | U | --- | --- |
| 4-Nitrophenol | mg/kg | 14.6 | U | --- | --- | 2.46 | U | --- | --- | 4.09 | U | --- | --- | --- | --- | 2.4 | U | --- | --- |
| Acenaphthene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Acenaphthylene | mg/kg | 0.726 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Acetophenone | mg/kg | 5.83 | U | --- | --- | 0.982 | U | --- | --- | 1.63 | U | --- | --- | --- | --- | 0.957 | U | --- | --- |
| Aniline | mg/kg | 14.6 | U | --- | --- | 2.46 | U | --- | --- | 4.09 | U | --- | --- | --- | --- | 2.4 | U | --- | --- |
| Anthracene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Azobenzene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Benzo(a)anthracene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Benzo(a)pyrene | mg/kg | 1.46 | U | --- | --- | 0.246 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.24 | U | --- | --- |
| Benzo(b)fluoranthene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Benzo(k)fluoranthene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | **0.787** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | **0.787** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | 42.4 | - | --- | --- | 4.80 | - | --- | --- | 12.2 | D | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Butylbenzylphthalate | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Chrysene | mg/kg | 1.70 | - | --- | --- | 0.246 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.24 | U | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | 0.466 | U | --- | --- | 0.246 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.24 | U | --- | --- |
| Dibenzofuran | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Diethylphthalate | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Dimethylphthalate | mg/kg | **2.91** | U | --- | --- | 0.49 | U | --- | --- | **0.816** | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Di-n-butylphthalate | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Di-n-octylphthalate | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Fluoranthene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Fluorene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.583 | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Hexachloroethane | mg/kg | **0.787** | U | --- | --- | 0.49 | U | --- | --- | 0.409 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Isophorone | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Naphthalene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Nitrobenzene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| N-Nitrosodimethylamine | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Pentachlorophenol | mg/kg | **5.83** | U | --- | --- | 2.46 | U | --- | --- | 1.63 | U | --- | --- | --- | --- | 2.4 | U | --- | --- |
| Phenanthrene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Phenol | mg/kg | 0.787 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |

| Laboratory Sample Designation | | 1709627-01 | | 1709627-02 | | 1709627-03 | | 1709627-04 | | 1709627-05 | | 1709627-06 | | 1709627-06RE1 | | 1709627-07 | | 1709627-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70 (0-2_8') | | SED-G-70 (1_12-1_68') | | SED-C-71 (0-1_7') | | SED-G-71 (0_34-0_68') | | SED-C-10 (0-2_9') | | SED-G-10 (0_58-1_16') | | SED-G-10 (0_58-1_16') | | SED-C-72-2 (03_1') | | SED-G-72-2 (2_48-3_1') | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Pyrene | mg/kg | 2.91 | U | --- | --- | 0.49 | U | --- | --- | 0.816 | U | --- | --- | --- | --- | 0.478 | U | --- | --- |
| Pyridine | mg/kg | 14.6 | U | --- | --- | 2.46 | U | --- | --- | 4.09 | U | --- | --- | --- | --- | 2.4 | U | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| 4,4´-DDE | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| 4,4´-DDT | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Aldrin | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| alpha-BHC | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| alpha-Chlordane | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| beta-BHC | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Chlordane (Total) | mg/kg | 0.029 | U | --- | --- | 0.0293 | U | --- | --- | 0.0498 | U | --- | --- | --- | --- | 0.0298 | U | --- | --- |
| delta-BHC | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Dieldrin | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Endosulfan I | mg/kg | 0.0060 | LC, P | --- | --- | 0.0053 | - | --- | --- | 0.0091 | - | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Endosulfan II | mg/kg | 0.0043 | LC, P | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Endosulfan Sulfate | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Endrin | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Endrin Ketone | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| gamma-BHC (Lindane) | mg/kg | 0.0022 | U | --- | --- | 0.0022 | U | --- | --- | **0.0037** | U | --- | --- | --- | --- | 0.0022 | U | --- | --- |
| gamma-Chlordane | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Heptachlor | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Heptachlor Epoxide | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Hexachlorobenzene | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0238 | LC, P | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Methoxychlor | mg/kg | 0.0036 | U | --- | --- | 0.0037 | U | --- | --- | 0.0062 | U | --- | --- | --- | --- | 0.0037 | U | --- | --- |
| Toxaphene | mg/kg | 0.181 | U | --- | --- | 0.183 | U | --- | --- | 0.311 | U | --- | --- | --- | --- | 0.186 | U | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.07 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.07 | U | --- | --- |
| Aroclor 1221 | mg/kg | 0.07 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.07 | U | --- | --- |
| Aroclor 1232 | mg/kg | 0.07 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.07 | U | --- | --- |
| Aroclor 1242 | mg/kg | 0.1 | - | --- | --- | 0.1 | - | --- | --- | 0.7 | - | --- | --- | --- | --- | 0.1 | - | --- | --- |
| Aroclor 1248 | mg/kg | 0.07 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.07 | U | --- | --- |
| Aroclor 1254 | mg/kg | **2.4** | D | --- | --- | **2.5** | D | --- | --- | **3.9** | D | --- | --- | --- | --- | 0.4 | - | --- | --- |

| Laboratory Sample Designation | | 1709627-01 | | 1709627-02 | | 1709627-03 | | 1709627-04 | | 1709627-05 | | 1709627-06 | | 1709627-06RE1 | | 1709627-07 | | 1709627-08 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70 (0-2_8') | | SED-G-70 (1_12-1_68') | | SED-C-71 (0-1_7') | | SED-G-71 (0_34-0_68') | | SED-C-10 (0-2_9') | | SED-G-10 (0_58-1_16') | | SED-G-10 (0_58-1_16') | | SED-C-72-2 (03_1') | | SED-G-72-2 (2_48-3_1') | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Aroclor 1260 | mg/kg | 0.4 | - | --- | --- | 0.5 | - | --- | --- | **1.3** | - | --- | --- | --- | --- | 0.1 | - | --- | --- |
| Aroclor 1262 | mg/kg | 0.07 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.07 | U | --- | --- |
| Aroclor 1268 | mg/kg | 0.07 | U | --- | --- | 0.07 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.07 | U | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.687 | LC, P, D | --- | --- | 0.027 | U | --- | --- | 0.043 | U | --- | --- | --- | --- | 0.027 | U | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | 0.12 | U, D | --- | --- | 0.130 | LC, P | --- | --- | 0.043 | U | --- | --- | --- | --- | 0.138 | LC, P | --- | --- |
| 2,4-D | mg/kg | 1.81 | LC, P, D | --- | --- | 0.135 | U | --- | --- | 0.211 | U | --- | --- | --- | --- | 0.393 | LC, P | --- | --- |
| 2,4-DB | mg/kg | 0.6 | U, D | --- | --- | 0.136 | U | --- | --- | 0.213 | U | --- | --- | --- | --- | 0.136 | U | --- | --- |
| Dalapon | mg/kg | 0.575 | U, D | --- | --- | 0.131 | U | --- | --- | 0.204 | U | --- | --- | --- | --- | 0.131 | U | --- | --- |
| Dicamba | mg/kg | 0.119 | U, D | --- | --- | 0.092 | LC, P | --- | --- | 0.042 | U | --- | --- | --- | --- | 0.027 | U | --- | --- |
| Dichlorprop | mg/kg | 0.594 | U, D | --- | --- | 0.341 | LC, P | --- | --- | 0.211 | U | --- | --- | --- | --- | 0.799 | - | --- | --- |
| Dinoseb | mg/kg | 0.6 | U, D | --- | --- | 0.164 | LC, P | --- | --- | 0.213 | U | --- | --- | --- | --- | 0.152 | LC, P | --- | --- |
| MCPA | mg/kg | 29.4 | U, D | --- | --- | 6.67 | # | --- | --- | 10.4 | U | --- | --- | --- | --- | 6.67 | # | --- | --- |
| MCPP | mg/kg | 29.7 | # | --- | --- | 6.74 | # | --- | --- | 10.6 | # | --- | --- | --- | --- | 6.74 | # | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 6.06 | - | --- | --- | 6.41 | - | --- | --- | 7.72 | - | --- | --- | --- | --- | 7.35 | - | --- | --- |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- | 200 | > | --- | --- |
| Percent Moisture | % | 32 | - | --- | --- | 33 | - | --- | --- | 60 | - | --- | --- | --- | --- | 34 | - | --- | --- |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- | 2 | U | --- | --- |
| Reactive Sulfide | mg/kg | 23.5 | - | --- | --- | 257 | - | --- | --- | 8.0 | - | --- | --- | --- | --- | 11.2 | - | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.252 | - | --- | --- | 0.525 | - | --- | --- | 0.05 | U | --- | --- | --- | --- | 0.05 | U | --- | --- |
| Barium | mg/L | 0.152 | - | --- | --- | 0.110 | - | --- | --- | 0.109 | - | --- | --- | --- | --- | 0.056 | - | --- | --- |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | 0.01 | U | --- | --- |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | --- | --- | 0.02 | U | --- | --- |
| Lead | mg/L | 0.05 | U | --- | --- | 0.566 | - | --- | --- | 0.05 | U | --- | --- | --- | --- | 0.05 | U | --- | --- |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | --- | --- | 0.0005 | U | --- | --- |
| Selenium | mg/L | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- | 0.2 | U, D | --- | --- |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- | 0.01 | U | --- | --- |

| Laboratory Sample Designation | | 1709627-09 | | 1709627-10 | | 1709627-11 | | 1709627-12 | | 1709627-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-7 | | SED-C-70 (0-2_8') Dried | | SED-C-71 (0-1_7') Dried | | SED-C-10 (0-2_9') Dried | | SED-C-72-2 (0-3_1') Dried | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | 0.002 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | 0.1 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709627-09 | | 1709627-10 | | 1709627-11 | | 1709627-12 | | 1709627-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-7 | | SED-C-70 (0-2_8') Dried | | SED-C-71 (0-1_7') Dried | | SED-C-10 (0-2_9') Dried | | SED-C-72-2 (0-3_1') Dried | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Dibromochloromethane | mg/kg | 0.002 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | 0.005 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | 0.01 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | 0.0075 | U | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709627-09 | | 1709627-10 | | 1709627-11 | | 1709627-12 | | 1709627-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-7 | | SED-C-70 (0-2_8') Dried | | SED-C-71 (0-1_7') Dried | | SED-C-10 (0-2_9') Dried | | SED-C-72-2 (0-3_1') Dried | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709627-09 | | 1709627-10 | | 1709627-11 | | 1709627-12 | | 1709627-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-7 | | SED-C-70 (0-2_8') Dried | | SED-C-71 (0-1_7') Dried | | SED-C-10 (0-2_9') Dried | | SED-C-72-2 (0-3_1') Dried | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | **186** | - | **102** | - | **165** | - | 15.8 | - |
| Barium | mg/kg | --- | --- | 56.1 | - | 42.2 | - | 78.1 | - | 24.2 | - |
| Cadmium | mg/kg | --- | --- | 0.47 | U | 0.46 | U | 1.98 | - | 0.44 | U |
| Chromium | mg/kg | --- | --- | 31.8 | - | 29.5 | - | 98.1 | - | 25.0 | - |
| Lead | mg/kg | --- | --- | **388** | - | **301** | - | **521** | - | 40.1 | - |
| Mercury | mg/kg | --- | --- | 2.41 | D | 2.47 | D | 2.60 | D | 0.105 | - |
| Selenium | mg/kg | --- | --- | 18.7 | EL, U, D | 18.5 | EL, U, D | 19.4 | EL, U, D | 17.5 | EL, U, D |
| Silver | mg/kg | --- | --- | 0.59 | - | 0.46 | U | 2.15 | - | 0.44 | U |
| **Pesticides** | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709627-09 | | 1709627-10 | | 1709627-11 | | 1709627-12 | | 1709627-13 | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | Trip Blank-7 | | SED-C-70 (0-2_8') Dried | | SED-C-71 (0-1_7') Dried | | SED-C-10 (0-2_9') Dried | | SED-C-72-2 (0-3_1') Dried | |
| Sample Date | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | | 09/21/2017 | |
| Sample Depth | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | 0.0016 | U | --- | --- | **0.0058** | U | --- | --- | 0.0018 | U | --- | --- | 0.002 | U | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0208 | - | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.0058 | - | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0078 | - | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0331 | - | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | 0.0803 | U | --- | --- | **0.291** | U | --- | --- | 0.091 | U | --- | --- | 0.102 | U | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 2-Butanone | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Acetone | mg/kg | --- | --- | 0.0550 | - | --- | --- | 0.122 | - | --- | --- | 0.0387 | - | --- | --- | 0.0347 | - | --- | --- |
| Benzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0174 | - | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Bromobenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Bromoform | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Bromomethane | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.251 | - | --- | --- | 0.0046 | U | --- | --- | 0.0097 | - | --- | --- |
| Chloroethane | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Chloroform | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Chloromethane | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | 0.004 | U | --- | --- | **0.0146** | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | 0.0016 | U | --- | --- | **0.0058** | U | --- | --- | 0.0018 | U | --- | --- | 0.002 | U | --- | --- |
| Dibromomethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | 0.0050 | - | --- | --- | 0.0314 | - | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.0131 | - | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Styrene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Toluene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | 0.004 | U | --- | --- | **0.0146** | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Trichloroethene | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | 0.004 | U | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | 0.008 | U | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Xylene O | mg/kg | --- | --- | 0.0118 | - | --- | --- | 0.0146 | U | --- | --- | 0.0046 | U | --- | --- | 0.0051 | U | --- | --- |
| Xylene P,M | mg/kg | --- | --- | 0.0099 | - | --- | --- | 0.0291 | U | --- | --- | 0.0091 | U | --- | --- | 0.0102 | U | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 1,2-Dichlorobenzene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 1,3-Dichlorobenzene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 1,4-Dichlorobenzene | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2,4,5-Trichlorophenol | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2,4,6-Trichlorophenol | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2,4-Dichlorophenol | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2,4-Dimethylphenol | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2,4-Dinitrophenol | mg/kg | 1.78 | U | --- | --- | 1.53 | U | --- | --- | 2.62 | U | --- | --- | 2.38 | U | --- | --- | 1.26 | U |
| 2,4-Dinitrotoluene | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2,6-Dinitrotoluene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2-Chloronaphthalene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2-Chlorophenol | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2-Methylnaphthalene | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2-Methylphenol | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 2-Nitrophenol | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 3,3´-Dichlorobenzidine | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.95 | U | --- | --- | 0.63 | U |
| 3+4-Methylphenol | mg/kg | 1.78 | U | --- | --- | 1.53 | U | --- | --- | 1.05 | U | --- | --- | 0.95 | U | --- | --- | 1.26 | U |
| 4-Bromophenyl-phenylether | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| 4-Chloroaniline | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.95 | U | --- | --- | 0.63 | U |
| 4-Nitrophenol | mg/kg | 4.47 | U | --- | --- | 3.83 | U | --- | --- | 2.62 | U | --- | --- | 2.38 | U | --- | --- | 3.16 | U |
| Acenaphthene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Acenaphthylene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Acetophenone | mg/kg | 1.78 | U | --- | --- | 1.53 | U | --- | --- | 1.05 | U | --- | --- | 0.95 | U | --- | --- | 1.26 | U |
| Aniline | mg/kg | 4.47 | U | --- | --- | 3.83 | U | --- | --- | 2.62 | U | --- | --- | 2.38 | U | --- | --- | 3.16 | U |
| Anthracene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Azobenzene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Benzo(a)anthracene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.565 | - | --- | --- | 0.63 | U |
| Benzo(a)pyrene | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.262 | U | --- | --- | 0.413 | - | --- | --- | 0.316 | U |
| Benzo(b)fluoranthene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.579 | - | --- | --- | 0.63 | U |
| Benzo(g,h,i)perylene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Benzo(k)fluoranthene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| bis(2-Chloroethoxy)methane | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| bis(2-Chloroethyl)ether | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| bis(2-chloroisopropyl)Ether | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| bis(2-Ethylhexyl)phthalate | mg/kg | 18.6 | - | --- | --- | 5.57 | - | --- | --- | 8.10 | - | --- | --- | 4.48 | - | --- | --- | 46.5 | D |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Chrysene | mg/kg | 0.553 | - | --- | --- | 0.383 | U | --- | --- | 0.262 | U | --- | --- | 0.539 | - | --- | --- | 0.316 | U |
| Dibenzo(a,h)Anthracene | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.262 | U | --- | --- | 0.238 | U | --- | --- | 0.316 | U |
| Dibenzofuran | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Diethylphthalate | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Dimethylphthalate | mg/kg | **0.891** | U | --- | --- | **0.765** | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Di-n-butylphthalate | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Di-n-octylphthalate | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 12.4 | - |
| Fluoranthene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 1.33 | - | --- | --- | 0.63 | U |
| Fluorene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Hexachlorobenzene | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Hexachlorobutadiene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Hexachloroethane | mg/kg | 0.447 | U | --- | --- | 0.383 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Indeno(1,2,3-cd)Pyrene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Isophorone | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Naphthalene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Nitrobenzene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| N-Nitrosodimethylamine | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Pentachlorophenol | mg/kg | 1.78 | U | --- | --- | 1.53 | U | --- | --- | 2.62 | U | --- | --- | 2.38 | U | --- | --- | 1.26 | U |
| Phenanthrene | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Phenol | mg/kg | 0.891 | U | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.474 | U | --- | --- | 0.63 | U |
| Pyrene | mg/kg | 0.921 | - | --- | --- | 0.765 | U | --- | --- | 0.522 | U | --- | --- | 0.926 | - | --- | --- | 0.63 | U |
| Pyridine | mg/kg | 4.47 | U | --- | --- | 3.83 | U | --- | --- | 2.62 | U | --- | --- | 2.38 | U | --- | --- | 3.16 | U |
| **Total Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| 4,4´-DDE | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| 4,4´-DDT | mg/kg | 0.0033 | U | --- | --- | 0.0498 | - | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Aldrin | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| alpha-BHC | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| alpha-Chlordane | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| beta-BHC | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Chlordane (Total) | mg/kg | 0.0265 | U | --- | --- | 0.045 | U | --- | --- | 0.0308 | U | --- | --- | 0.0282 | U | --- | --- | 0.0372 | U |
| delta-BHC | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Dieldrin | mg/kg | 0.0117 | LC, P | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Endosulfan I | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Endosulfan II | mg/kg | 0.0042 | LC, P | --- | --- | 0.0056 | U | --- | --- | 0.0040 | LC, P | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Endosulfan Sulfate | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Endrin | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Endrin Ketone | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| gamma-BHC (Lindane) | mg/kg | 0.002 | U | --- | --- | 0.0023 | U | --- | --- | 0.0023 | U | --- | --- | 0.0021 | U | --- | --- | 0.0028 | U |
| gamma-Chlordane | mg/kg | 0.0033 | U | --- | --- | 0.0197 | - | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Heptachlor | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Heptachlor Epoxide | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Hexachlorobenzene | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Methoxychlor | mg/kg | 0.0033 | U | --- | --- | 0.0056 | U | --- | --- | 0.0038 | U | --- | --- | 0.0035 | U | --- | --- | 0.0047 | U |
| Toxaphene | mg/kg | 0.165 | U | --- | --- | 0.281 | U | --- | --- | 0.192 | U | --- | --- | 0.176 | U | --- | --- | 0.233 | U |
| **PCBs** | | | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U |
| Aroclor 1221 | mg/kg | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U |
| Aroclor 1232 | mg/kg | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U |
| Aroclor 1242 | mg/kg | 0.4 | U, D | --- | --- | 0.7 | - | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.8 | D |
| Aroclor 1248 | mg/kg | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U |
| Aroclor 1254 | mg/kg | **2.6** | D | --- | --- | **2.2** | - | --- | --- | **1.1** | - | --- | --- | 0.7 | - | --- | --- | **2.7** | D |
| Aroclor 1260 | mg/kg | 0.9 | D | --- | --- | 0.7 | - | --- | --- | 0.2 | - | --- | --- | 0.2 | - | --- | --- | 0.7 | D |
| Aroclor 1262 | mg/kg | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U |
| Aroclor 1268 | mg/kg | 0.07 | U | --- | --- | 0.1 | U | --- | --- | 0.08 | U | --- | --- | 0.07 | U | --- | --- | 0.09 | U |
| **Herbicides** | | | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | 0.023 | U | --- | --- | 0.041 | U | --- | --- | 0.133 | U, D | --- | --- | 0.460 | D | --- | --- | 0.357 | U, D |
| 2,4,5-TP (Silvex) | mg/kg | 0.023 | U | --- | --- | 0.041 | U | --- | --- | 0.133 | U, D | --- | --- | 0.121 | U, D | --- | --- | 6.43 | LC, P, D |
| 2,4-D | mg/kg | 0.114 | U | --- | --- | 0.204 | U | --- | --- | 0.658 | U, D | --- | --- | 0.599 | U, D | --- | --- | 15.9 | LC, P, D |
| 2,4-DB | mg/kg | 0.115 | U | --- | --- | 0.206 | U | --- | --- | 0.665 | U, D | --- | --- | 0.605 | U, D | --- | --- | 5.73 | LC, P, D |
| Dalapon | mg/kg | 0.11 | U | --- | --- | 0.197 | U | --- | --- | 0.637 | U, D | --- | --- | 0.58 | U, D | --- | --- | 1.71 | U, D |
| Dicamba | mg/kg | 0.023 | U | --- | --- | 0.132 | LC, P | --- | --- | 0.132 | U, D | --- | --- | 0.12 | U, D | --- | --- | 0.353 | U, D |
| Dichlorprop | mg/kg | 0.114 | U | --- | --- | 0.248 | LC, P | --- | --- | 2.72 | D | --- | --- | 1.21 | LC, P, D | --- | --- | 3.77 | LC, P, D |
| Dinoseb | mg/kg | 0.115 | U | --- | --- | 0.206 | U | --- | --- | 0.665 | U, D | --- | --- | 0.605 | U, D | --- | --- | 1.79 | U, D |
| MCPA | mg/kg | 5.64 | # | --- | --- | 10.1 | # | --- | --- | 32.6 | U, D | --- | --- | 29.6 | U, D | --- | --- | 87.4 | # |
| MCPP | mg/kg | 5.70 | # | --- | --- | 10.2 | # | --- | --- | 32.9 | # | --- | --- | 29.9 | # | --- | --- | 88.4 | # |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | 6.46 | - | --- | --- | 7.54 | - | --- | --- | 6.61 | - | --- | --- | 6.54 | - | --- | --- | 7.76 | - |
| Flashpoint | °F | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > |
| Percent Moisture | % | 28 | - | --- | --- | 57 | - | --- | --- | 36 | - | --- | --- | 31 | - | --- | --- | 48 | - |
| Reactive Cyanide | mg/kg | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U |
| Reactive Sulfide | mg/kg | 332 | - | --- | --- | 11.8 | - | --- | --- | 3.5 | - | --- | --- | 56.9 | - | --- | --- | 101 | - |
| **TCLP Metals** | | | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | 0.191 | - | --- | --- | 0.05 | U | --- | --- | 0.387 | - | --- | --- | 0.676 | - | --- | --- | 0.081 | - |
| Barium | mg/L | 0.053 | - | --- | --- | 0.107 | - | --- | --- | 0.287 | - | --- | --- | 0.126 | - | --- | --- | 0.137 | - |
| Cadmium | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709676-01 | | 1709676-02 | | 1709676-03 | | 1709676-04 | | 1709676-05 | | 1709676-06 | | 1709676-07 | | 1709676-08 | | 1709676-09 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') | | SED-G-70-2 (0_2-0_4') | | SED-C-69-2 (0-4_0') | | SED-G-69-2 (3_2-4_0') | | SED-C-71-2 (0-1_9') | | SED-G-71-2 (0-0_38') | | SED-C-DUP-4 | | SED-G-DUP-4 | | SED-C-65-2 (0-3_5') | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | | | |
| Chromium | mg/L | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U |
| Lead | mg/L | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.522 | - | --- | --- | 0.509 | - | --- | --- | 0.05 | U |
| Mercury | mg/L | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U |
| Selenium | mg/L | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U |
| Silver | mg/L | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,1,1-Trichloroethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,1,2,2-Tetrachloroethane | mg/kg | **0.0058** | U | --- | --- | 0.0041 | U | --- | --- | **0.0115** | U | --- | --- | **0.006** | U | 0.002 | U |
| 1,1,2-Trichloroethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,1-Dichloroethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,1-Dichloroethene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,1-Dichloropropene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2,3-Trichlorobenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2,3-Trichloropropane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2,4-Trichlorobenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2,4-Trimethylbenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.675 | - | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2-Dibromo-3-Chloropropane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2-Dibromoethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2-Dichlorobenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2-Dichloroethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,2-Dichloropropane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,3,5-Trimethylbenzene | mg/kg | 0.0867 | - | --- | --- | 0.0102 | U | --- | --- | 0.386 | - | --- | --- | 0.0149 | U | 0.005 | U |
| 1,3-Dichlorobenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,3-Dichloropropane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,4-Dichlorobenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 1,4-Dioxane | mg/kg | **0.289** | U | --- | --- | **0.203** | U | --- | --- | **0.573** | U | --- | --- | **0.298** | U | 0.1 | U |
| 2,2-Dichloropropane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 2-Butanone | mg/kg | 0.0289 | U | --- | --- | 0.0321 | - | --- | --- | 1.31 | - | --- | --- | 0.0629 | - | 0.01 | U |
| 2-Chlorotoluene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 2-Hexanone | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.214 | - | --- | --- | 0.0298 | U | 0.01 | U |
| 4-Chlorotoluene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 4-Isopropyltoluene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| 4-Methyl-2-Pentanone | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| Acetone | mg/kg | 0.256 | - | --- | --- | 0.364 | - | --- | --- | **14.6** | E | --- | --- | 0.427 | - | 0.01 | U |
| Benzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.145 | - | --- | --- | 0.0149 | U | 0.005 | U |
| Bromobenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Bromochloromethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Bromodichloromethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Bromoform | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Bromomethane | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| Carbon Disulfide | mg/kg | 0.0262 | - | --- | --- | 0.0202 | - | --- | --- | 0.383 | - | --- | --- | 0.0149 | U | 0.005 | U |
| Carbon Tetrachloride | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Chlorobenzene | mg/kg | 0.255 | - | --- | --- | 0.0186 | - | --- | --- | 0.0286 | U | --- | --- | 0.0981 | - | 0.005 | U |
| Chloroethane | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| Chloroform | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Chloromethane | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| cis-1,2-Dichloroethene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| cis-1,3-Dichloropropene | mg/kg | **0.0145** | U | --- | --- | **0.0102** | U | --- | --- | **0.0286** | U | --- | --- | **0.0149** | U | 0.005 | U |
| Dibromochloromethane | mg/kg | **0.0058** | U | --- | --- | 0.0041 | U | --- | --- | **0.0115** | U | --- | --- | **0.006** | U | 0.002 | U |
| Dibromomethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| Diethyl Ether | mg/kg | 0.0162 | - | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0177 | - | 0.005 | U |
| Di-isopropyl ether | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Ethyl tertiary-butyl ether | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Ethylbenzene | mg/kg | 0.0367 | - | --- | --- | 0.0102 | U | --- | --- | 0.118 | - | --- | --- | 0.0277 | - | 0.005 | U |
| Hexachlorobutadiene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Isopropylbenzene | mg/kg | 0.0405 | - | --- | --- | 0.0102 | U | --- | --- | 0.0829 | - | --- | --- | 0.0394 | - | 0.005 | U |
| Methyl tert-Butyl Ether | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Methylene Chloride | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| Naphthalene | mg/kg | 0.0192 | - | --- | --- | 0.0102 | U | --- | --- | 0.856 | - | --- | --- | 0.0149 | U | 0.005 | U |
| n-Butylbenzene | mg/kg | 0.0425 | - | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0769 | - | 0.005 | U |
| n-Propylbenzene | mg/kg | 0.0645 | - | --- | --- | 0.0102 | U | --- | --- | 0.134 | - | --- | --- | 0.0622 | - | 0.005 | U |
| sec-Butylbenzene | mg/kg | 0.0175 | - | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0308 | - | 0.005 | U |
| Styrene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| tert-Butylbenzene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Tertiary-amyl methyl ether | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Tetrachloroethene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Tetrahydrofuran | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Toluene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.119 | - | --- | --- | 0.0149 | U | 0.005 | U |
| trans-1,2-Dichloroethene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| trans-1,3-Dichloropropene | mg/kg | **0.0145** | U | --- | --- | **0.0102** | U | --- | --- | **0.0286** | U | --- | --- | **0.0149** | U | 0.005 | U |
| Trichloroethene | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0999 | - | --- | --- | 0.0149 | U | 0.005 | U |
| Trichlorofluoromethane | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.0286 | U | --- | --- | 0.0149 | U | 0.005 | U |
| Vinyl Chloride | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.0573 | U | --- | --- | 0.0298 | U | 0.01 | U |
| Xylene O | mg/kg | 0.0145 | U | --- | --- | 0.0102 | U | --- | --- | 0.187 | - | --- | --- | 0.0149 | U | 0.005 | U |
| Xylene P,M | mg/kg | 0.0289 | U | --- | --- | 0.0203 | U | --- | --- | 0.273 | - | --- | --- | 0.0298 | U | 0.01 | U |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.0075 | U |
| **VOCs** | | | | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 3.35 | - | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **10.4** | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 3.10 | - | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **416** | U | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **10.4** | U | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 10.4 | U | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **10.4** | U | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **12.1** | - | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 3.41 | - | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **4.16** | U | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **7.20** | - | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 10.4 | U | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | **2.08** | U | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 2.08 | U | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | 4.16 | U | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | 1.45 | U | --- | --- | 1.96 | U | --- | --- | 1.46 | U | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | 1.45 | U | --- | --- | 2.59 | - | --- | --- | 1.46 | U | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | 3.62 | U | --- | --- | 4.9 | U | --- | --- | 3.65 | U | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | 1.45 | U | --- | --- | 1.96 | U | --- | --- | 1.46 | U | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | 3.62 | U | --- | --- | 4.9 | U | --- | --- | 3.65 | U | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | 0.525 | - | --- | --- | 0.49 | U | --- | --- | 0.534 | - | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | 45.3 | D | --- | --- | **370** | D | --- | --- | **101** | D | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Butylbenzylphthalate | mg/kg | --- | --- | 0.722 | U | --- | --- | 1.89 | - | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | 0.603 | - | --- | --- | 0.49 | U | --- | --- | 0.581 | - | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | **0.722** | U | --- | --- | **0.976** | U | --- | --- | **0.727** | U | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | 0.722 | U | --- | --- | 78.4 | D | --- | --- | 5.36 | - | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | 0.923 | - | --- | --- | 0.976 | U | --- | --- | 0.989 | - | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | 0.362 | U | --- | --- | 0.49 | U | --- | --- | 0.365 | U | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | 0.722 | U | --- | --- | 1.64 | - | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | 1.45 | U | --- | --- | 1.96 | U | --- | --- | 1.46 | U | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | 0.780 | - | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | 0.722 | U | --- | --- | 0.976 | U | --- | --- | 0.727 | U | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | 1.31 | - | --- | --- | 0.976 | U | --- | --- | 1.20 | - | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | 3.62 | U | --- | --- | 4.9 | U | --- | --- | 3.65 | U | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Pesticides** | | | | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0151 | - | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | 0.044 | U | --- | --- | 0.0584 | U | --- | --- | 0.044 | U | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Endosulfan II | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | 0.0022 | U | --- | --- | 0.0029 | U | --- | --- | 0.0022 | U | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | 0.0055 | U | --- | --- | 0.0073 | U | --- | --- | 0.0055 | U | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | 0.275 | U | --- | --- | 0.365 | U | --- | --- | 0.275 | U | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | 0.5 | - | --- | --- | **1.1** | D | --- | --- | 0.5 | - | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | **1.7** | - | --- | --- | **3.4** | D | --- | --- | **1.5** | - | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | 0.6 | - | --- | --- | 1.0 | D | --- | --- | 0.6 | - | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | 0.1 | U | --- | --- | 0.2 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | 0.202 | U, D | --- | --- | 0.246 | U, D | --- | --- | 0.197 | U, D | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | 0.202 | U, D | --- | --- | 0.493 | LC, P, D | --- | --- | 0.197 | U, D | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | 1 | U, D | --- | --- | 1.22 | U, D | --- | --- | 0.975 | U, D | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | 1.01 | U, D | --- | --- | 1.23 | U, D | --- | --- | 0.985 | U, D | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | 0.968 | U, D | --- | --- | 1.18 | U, D | --- | --- | 0.944 | U, D | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | 0.2 | U, D | --- | --- | 0.244 | U, D | --- | --- | 0.374 | LC, P, D | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | 1 | U, D | --- | --- | 1.22 | U, D | --- | --- | 0.975 | U, D | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | 1.01 | U, D | --- | --- | 1.23 | U, D | --- | --- | 0.985 | U, D | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | 49.5 | # | --- | --- | 60.3 | # | --- | --- | 48.2 | # | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | 50.0 | # | --- | --- | 61.0 | # | --- | --- | 48.7 | # | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | 7.35 | - | --- | --- | 5.29 | - | --- | --- | 7.53 | - | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | 200 | > | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | 56 | - | --- | --- | 67 | - | --- | --- | 55 | - | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | 2 | U | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | 26.2 | - | --- | --- | 334 | - | --- | --- | 2 | U | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | 0.071 | - | --- | --- | 0.05 | U | --- | --- | 0.064 | - | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | 0.103 | - | --- | --- | 0.05 | U | --- | --- | 0.131 | - | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-10 | | 1709676-11 | | 1709676-12 | | 1709676-13 | | 1709676-14 | | 1709676-15 | | 1709676-16 | | 1709676-17 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-G-65-2 (2_8-3_5') | | SED-C-66-2 (0-5_3') | | SED-G-66-2 (3_1-4_24') | | SED-C-68-2 (0-5_3') | | SED-G-68-2 (4_24-5_3') | | SED-C-67-2 (0-3_5') | | SED-G-67-2 (2_8-3_5') | | Trip Blank - 8 | |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | |
| Sample Depth | | | | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | | | | |
| Chromium | mg/L | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | 0.02 | U | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | 0.05 | U | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | 0.0005 | U | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | 0.1 | U | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | 0.01 | U | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| **VOCs - Low** | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **VOCs** | | | | | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Toluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **SVOCs** | | | | | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Butylbenzylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Metals** | | | | | | | | | | | | | | |
| Arsenic | mg/kg | **203** | - | **188** | - | **72.5** | - | **70.9** | - | **365** | - | **207** | - | **562** |
| Barium | mg/kg | 77.9 | - | 70.8 | - | 23.6 | - | 22.8 | - | 64.7 | - | 82.7 | - | 94.2 |
| Cadmium | mg/kg | 0.44 | U | 1.91 | - | 0.5 | U | 0.46 | U | 1.48 | - | 3.04 | - | 5.89 |
| Chromium | mg/kg | 16.9 | - | 82.3 | - | 23.2 | - | 23.2 | - | 74.8 | - | 93.3 | - | **196** |
| Lead | mg/kg | **810** | - | **393** | - | 132 | - | 178 | - | **359** | - | **525** | - | **849** |
| Mercury | mg/kg | 3.76 | D | 1.91 | D | 1.40 | D | 3.17 | D | 1.90 | D | 1.96 | D | 3.69 |
| Selenium | mg/kg | 17.5 | EL, U, D | 18.6 | EL, U, D | 19.9 | EL, U, D | 18.5 | EL, U, D | 18.7 | EL, U, D | 18 | EL, U, D | 19.3 |
| Silver | mg/kg | 0.95 | - | 1.77 | - | 0.5 | U | 0.46 | U | 1.64 | - | 2.38 | - | 3.77 |
| **Pesticides** | | | | | | | | | | | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709676 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Endosulfan II | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Herbicides** | | | | | | | | | | | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Classical Chemistry** | | | | | | | | | | | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TCLP Metals** | | | | | | | | | | | | | | |
| Arsenic | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Barium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| Laboratory Sample Designation | | 1709676-18 | | 1709676-19 | | 1709676-20 | | 1709676-21 | | 1709676-22 | | 1709676-23 | | 1709€ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sample Designation | | SED-C-70-2 (0-1_0') Dried | | SED-C-69-2 (0-4_0') Dried | | SED-C-71-2 (0-1_9') Dried | | SED-C-DUP-4 Dried | | SED-C-65-2 (0-3_5') Dried | | SED-C-66-2 (0-5_3') Dried | | SED-C-68-2 ( |
| Sample Date | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22/2017 | | 09/22 |
| Sample Depth | | | | | | | | | | | | | | |
| Soil Type | | | | | | | | | | | | | | |
| Group Designation | | | | | | | | | | | | | | |
| Chromium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | mg/L | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| **VOCs - Low** | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,4-Dioxane | mg/kg | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- |
| Toluene | mg/kg | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- |
| Xylenes (Total) | mg/kg | --- | --- | --- |
| **VOCs** | | | | |
| 1,1,1,2-Tetrachloroethane | mg/kg | --- | --- | --- |
| 1,1,1-Trichloroethane | mg/kg | --- | --- | --- |
| 1,1,2,2-Tetrachloroethane | mg/kg | --- | --- | --- |
| 1,1,2-Trichloroethane | mg/kg | --- | --- | --- |
| 1,1-Dichloroethane | mg/kg | --- | --- | --- |
| 1,1-Dichloroethene | mg/kg | --- | --- | --- |
| 1,1-Dichloropropene | mg/kg | --- | --- | --- |
| 1,2,3-Trichlorobenzene | mg/kg | --- | --- | --- |
| 1,2,3-Trichloropropane | mg/kg | --- | --- | --- |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- |
| 1,2,4-Trimethylbenzene | mg/kg | --- | --- | --- |
| 1,2-Dibromo-3-Chloropropane | mg/kg | --- | --- | --- |
| 1,2-Dibromoethane | mg/kg | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,2-Dichloroethane | mg/kg | --- | --- | --- |
| 1,2-Dichloropropane | mg/kg | --- | --- | --- |
| 1,3,5-Trimethylbenzene | mg/kg | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,3-Dichloropropane | mg/kg | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,4-Dioxane - Screen | mg/kg | --- | --- | --- |
| 2,2-Dichloropropane | mg/kg | --- | --- | --- |
| 2-Butanone | mg/kg | --- | --- | --- |
| 2-Chlorotoluene | mg/kg | --- | --- | --- |
| 2-Hexanone | mg/kg | --- | --- | --- |
| 4-Chlorotoluene | mg/kg | --- | --- | --- |
| 4-Isopropyltoluene | mg/kg | --- | --- | --- |
| 4-Methyl-2-Pentanone | mg/kg | --- | --- | --- |
| Acetone | mg/kg | --- | --- | --- |
| Benzene | mg/kg | --- | --- | --- |
| Bromobenzene | mg/kg | --- | --- | --- |
| Bromochloromethane | mg/kg | --- | --- | --- |
| Bromodichloromethane | mg/kg | --- | --- | --- |
| Bromoform | mg/kg | --- | --- | --- |
| Bromomethane | mg/kg | --- | --- | --- |
| Carbon Disulfide | mg/kg | --- | --- | --- |
| Carbon Tetrachloride | mg/kg | --- | --- | --- |
| Chlorobenzene | mg/kg | --- | --- | --- |
| Chloroethane | mg/kg | --- | --- | --- |
| Chloroform | mg/kg | --- | --- | --- |
| Chloromethane | mg/kg | --- | --- | --- |
| cis-1,2-Dichloroethene | mg/kg | --- | --- | --- |
| cis-1,3-Dichloropropene | mg/kg | --- | --- | --- |
| Dibromochloromethane | mg/kg | --- | --- | --- |
| Dibromomethane | mg/kg | --- | --- | --- |
| Dichlorodifluoromethane | mg/kg | --- | --- | --- |
| Diethyl Ether | mg/kg | --- | --- | --- |
| Di-isopropyl ether | mg/kg | --- | --- | --- |
| Ethyl tertiary-butyl ether | mg/kg | --- | --- | --- |
| Ethylbenzene | mg/kg | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- |
| Isopropylbenzene | mg/kg | --- | --- | --- |
| Methyl tert-Butyl Ether | mg/kg | --- | --- | --- |
| Methylene Chloride | mg/kg | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- |
| n-Butylbenzene | mg/kg | --- | --- | --- |
| n-Propylbenzene | mg/kg | --- | --- | --- |
| sec-Butylbenzene | mg/kg | --- | --- | --- |
| Styrene | mg/kg | --- | --- | --- |
| tert-Butylbenzene | mg/kg | --- | --- | --- |
| Tertiary-amyl methyl ether | mg/kg | --- | --- | --- |
| Tetrachloroethene | mg/kg | --- | --- | --- |
| Tetrahydrofuran | mg/kg | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| Toluene | mg/kg | --- | --- | --- |
| trans-1,2-Dichloroethene | mg/kg | --- | --- | --- |
| trans-1,3-Dichloropropene | mg/kg | --- | --- | --- |
| Trichloroethene | mg/kg | --- | --- | --- |
| Trichlorofluoromethane | mg/kg | --- | --- | --- |
| Vinyl Chloride | mg/kg | --- | --- | --- |
| Xylene O | mg/kg | --- | --- | --- |
| Xylene P,M | mg/kg | --- | --- | --- |
| **SVOCs** | | | | |
| 1,2,4-Trichlorobenzene | mg/kg | --- | --- | --- |
| 1,2-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,3-Dichlorobenzene | mg/kg | --- | --- | --- |
| 1,4-Dichlorobenzene | mg/kg | --- | --- | --- |
| 2,4,5-Trichlorophenol | mg/kg | --- | --- | --- |
| 2,4,6-Trichlorophenol | mg/kg | --- | --- | --- |
| 2,4-Dichlorophenol | mg/kg | --- | --- | --- |
| 2,4-Dimethylphenol | mg/kg | --- | --- | --- |
| 2,4-Dinitrophenol | mg/kg | --- | --- | --- |
| 2,4-Dinitrotoluene | mg/kg | --- | --- | --- |
| 2,6-Dinitrotoluene | mg/kg | --- | --- | --- |
| 2-Chloronaphthalene | mg/kg | --- | --- | --- |
| 2-Chlorophenol | mg/kg | --- | --- | --- |
| 2-Methylnaphthalene | mg/kg | --- | --- | --- |
| 2-Methylphenol | mg/kg | --- | --- | --- |
| 2-Nitrophenol | mg/kg | --- | --- | --- |
| 3,3´-Dichlorobenzidine | mg/kg | --- | --- | --- |
| 3+4-Methylphenol | mg/kg | --- | --- | --- |
| 4-Bromophenyl-phenylether | mg/kg | --- | --- | --- |
| 4-Chloroaniline | mg/kg | --- | --- | --- |
| 4-Nitrophenol | mg/kg | --- | --- | --- |
| Acenaphthene | mg/kg | --- | --- | --- |
| Acenaphthylene | mg/kg | --- | --- | --- |
| Acetophenone | mg/kg | --- | --- | --- |
| Aniline | mg/kg | --- | --- | --- |
| Anthracene | mg/kg | --- | --- | --- |
| Azobenzene | mg/kg | --- | --- | --- |
| Benzo(a)anthracene | mg/kg | --- | --- | --- |
| Benzo(a)pyrene | mg/kg | --- | --- | --- |
| Benzo(b)fluoranthene | mg/kg | --- | --- | --- |
| Benzo(g,h,i)perylene | mg/kg | --- | --- | --- |
| Benzo(k)fluoranthene | mg/kg | --- | --- | --- |
| bis(2-Chloroethoxy)methane | mg/kg | --- | --- | --- |
| bis(2-Chloroethyl)ether | mg/kg | --- | --- | --- |
| bis(2-chloroisopropyl)Ether | mg/kg | --- | --- | --- |
| bis(2-Ethylhexyl)phthalate | mg/kg | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| Butylbenzylphthalate | mg/kg | --- | --- | --- |
| Chrysene | mg/kg | --- | --- | --- |
| Dibenzo(a,h)Anthracene | mg/kg | --- | --- | --- |
| Dibenzofuran | mg/kg | --- | --- | --- |
| Diethylphthalate | mg/kg | --- | --- | --- |
| Dimethylphthalate | mg/kg | --- | --- | --- |
| Di-n-butylphthalate | mg/kg | --- | --- | --- |
| Di-n-octylphthalate | mg/kg | --- | --- | --- |
| Fluoranthene | mg/kg | --- | --- | --- |
| Fluorene | mg/kg | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- |
| Hexachlorobutadiene | mg/kg | --- | --- | --- |
| Hexachloroethane | mg/kg | --- | --- | --- |
| Indeno(1,2,3-cd)Pyrene | mg/kg | --- | --- | --- |
| Isophorone | mg/kg | --- | --- | --- |
| Naphthalene | mg/kg | --- | --- | --- |
| Nitrobenzene | mg/kg | --- | --- | --- |
| N-Nitrosodimethylamine | mg/kg | --- | --- | --- |
| Pentachlorophenol | mg/kg | --- | --- | --- |
| Phenanthrene | mg/kg | --- | --- | --- |
| Phenol | mg/kg | --- | --- | --- |
| Pyrene | mg/kg | --- | --- | --- |
| Pyridine | mg/kg | --- | --- | --- |
| **Total Metals** | | | | |
| Arsenic | mg/kg | - | **215** | - |
| Barium | mg/kg | - | 80.4 | - |
| Cadmium | mg/kg | - | 1.64 | - |
| Chromium | mg/kg | - | 82.1 | - |
| Lead | mg/kg | - | **335** | - |
| Mercury | mg/kg | D | 1.08 | D |
| Selenium | mg/kg | EL, U, D | 18.9 | EL, U, D |
| Silver | mg/kg | - | 1.68 | - |
| **Pesticides** | | | | |
| 4,4´-DDD | mg/kg | --- | --- | --- |
| 4,4´-DDE | mg/kg | --- | --- | --- |
| 4,4´-DDT | mg/kg | --- | --- | --- |
| Aldrin | mg/kg | --- | --- | --- |
| alpha-BHC | mg/kg | --- | --- | --- |
| alpha-Chlordane | mg/kg | --- | --- | --- |
| beta-BHC | mg/kg | --- | --- | --- |
| Chlordane (Total) | mg/kg | --- | --- | --- |
| delta-BHC | mg/kg | --- | --- | --- |
| Dieldrin | mg/kg | --- | --- | --- |
| Endosulfan I | mg/kg | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| | | | | |
| Endosulfan II | mg/kg | --- | --- | --- |
| Endosulfan Sulfate | mg/kg | --- | --- | --- |
| Endrin | mg/kg | --- | --- | --- |
| Endrin Ketone | mg/kg | --- | --- | --- |
| gamma-BHC (Lindane) | mg/kg | --- | --- | --- |
| gamma-Chlordane | mg/kg | --- | --- | --- |
| Heptachlor | mg/kg | --- | --- | --- |
| Heptachlor Epoxide | mg/kg | --- | --- | --- |
| Hexachlorobenzene | mg/kg | --- | --- | --- |
| Methoxychlor | mg/kg | --- | --- | --- |
| Toxaphene | mg/kg | --- | --- | --- |
| | | | | |
| **PCBs** | | | | |
| Aroclor 1016 | mg/kg | --- | --- | --- |
| Aroclor 1221 | mg/kg | --- | --- | --- |
| Aroclor 1232 | mg/kg | --- | --- | --- |
| Aroclor 1242 | mg/kg | --- | --- | --- |
| Aroclor 1248 | mg/kg | --- | --- | --- |
| Aroclor 1254 | mg/kg | --- | --- | --- |
| Aroclor 1260 | mg/kg | --- | --- | --- |
| Aroclor 1262 | mg/kg | --- | --- | --- |
| Aroclor 1268 | mg/kg | --- | --- | --- |
| | | | | |
| **Herbicides** | | | | |
| 2,4,5-T | mg/kg | --- | --- | --- |
| 2,4,5-TP (Silvex) | mg/kg | --- | --- | --- |
| 2,4-D | mg/kg | --- | --- | --- |
| 2,4-DB | mg/kg | --- | --- | --- |
| Dalapon | mg/kg | --- | --- | --- |
| Dicamba | mg/kg | --- | --- | --- |
| Dichlorprop | mg/kg | --- | --- | --- |
| Dinoseb | mg/kg | --- | --- | --- |
| MCPA | mg/kg | --- | --- | --- |
| MCPP | mg/kg | --- | --- | --- |
| | | | | |
| **Classical Chemistry** | | | | |
| Corrosivity (pH) | S.U. | --- | --- | --- |
| Flashpoint | °F | --- | --- | --- |
| Percent Moisture | % | --- | --- | --- |
| Reactive Cyanide | mg/kg | --- | --- | --- |
| Reactive Sulfide | mg/kg | --- | --- | --- |
| | | | | |
| **TCLP Metals** | | | | |
| Arsenic | mg/L | --- | --- | --- |
| Barium | mg/L | --- | --- | --- |
| Cadmium | mg/L | --- | --- | --- |

| | | | | |
|---|---|---|---|---|
| Laboratory Sample Designation | | ;76-24 | 1709676-25 | |
| Sample Designation | | 0-5_3') Dried | SED-C-67-2 (0-3_5') Dried | |
| Sample Date | | /2017 | 09/22/2017 | |
| Sample Depth | | | | |
| Soil Type | | | | |
| Group Designation | | | | |
| Chromium | mg/L | --- | --- | --- |
| Lead | mg/L | --- | --- | --- |
| Mercury | mg/L | --- | --- | --- |
| Selenium | mg/L | --- | --- | --- |
| Silver | mg/L | --- | --- | --- |

| Qualifier | Description |
|---|---|
| # | Modified result |
| < | Less than. |
| > | Greater than. |
| >= | Greater than or equal to |
| B | Present in Method Blank (B). |
| BOD | Initial setup for BOD yielded unacceptable results. The sample was replanted on [Custom Value] and these results are reported. |
| DW | Water layer was decanted from sample prior to analysis. |
| E | Reported above the quantitation limit; Estimated value (E). |
| EL | Elevated Method Reporting Limits due to sample matrix (EL). |
| H | Estimated value. Sample hold times were exceeded (H). |
| HT | The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes. |
| J | Reported between MDL and MRL |
| J* | This analyte was evaluated down to the Limit of Detection (LOD). |
| L | Reported to the Method Detection Limit. |
| LC | Lower value is used due to matrix interferences (LC). |
| LS | Limited Sample did not allow for re-extraction. |
| NE | Not Evaluated |
| OPO4 | Samples for Orthophosphate are required to be filtered within 15 minutes of sampling as stated in 40 CFR Part 136 Table II. |
| P | Percent difference between primary and confirmation results exceeds 40% (P). |
| PB | Presence of PCBs in the sample may cause this analyte to be biased high. |
| PC | Possible carryover |
| PH | Sample was received improperly preserved (PH). |
| PH- | pH <= 2 |
| PH+ | pH > 2 (PH+) |
| PP | This sample showed multiple peaks present with no discernable PCB Aroclor pattern. PCB congeners may be present. |
| PP- | This analyte is a poor performer for this method |
| R | Eh-pH data demonstrates reducing conditions. |
| RW | Reduced weight used for TCLP/SPLP Extraction. |
| SUB | Subcontracted analysis; see attached report |
| TCN | Based on non-detect result for Total Cyanide, Amenable Cyanide would also be non-detect. Total Cyanide is reported. |
| TOT | In review of the total results obtained on this sample, the TCLP target analytes were either ND above the MRL or not present in a concentration such that the sample would generate TCLP extract concentrations above the TCLP MRL. TCLP was not performed. |
| V | Estimated value. |
| WL | Results obtained from a deionized water leach of the sample. |
| U | Undetected |
| D | Diluted |

# APPENDIX I

Laboratory Test Results of Cap Material

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1711199**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 5:16 pm, Nov 20, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**

| | |
|---|---|
| CTS - Cranston, RI | Grain Size Analysis, Soil Classification, Water Content |
| Pace Analytical - Minneapolis, MN | Dioxin |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

## SAMPLE RECEIPT

The following samples were received on November 08, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on November 8, 2017 at 14:19.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1711199-01 | Type A Capping Sand | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711199-02 | Type C Capping Sand | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711199-03 | Trip Blank | Solid | 8260B Low |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

C7K0160-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
1,2-Dichloroethane (21% @ 20%), Bromomethane (28% @ 20%)

**8081B Organochlorine Pesticides**

C7K0147-CCV5 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4,4´-DDT (22% @ 20%)

**8151A Chlorinated Herbicides**

1711199-02 **Modified result**
MCPP , MCPP [2C]

1711199-02 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

C7K0198-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4,5-T [2C] (22% @ 15%), 2,4,5-TP (Silvex) [2C] (18% @ 15%), Dicamba [2C] (18% @ 15%), Dichlorprop [2C] (19% @ 15%), Dinoseb [2C] (19% @ 15%)

CK70954-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Dinoseb (36% @ 30%)

**8270D Semi-Volatile Organic Compounds**

C7K0149-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (86% @ 80-120%)

C7K0149-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Fluorophenol (21% @ 20%)

C7K0149-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
p-Terphenyl-d14 (25% @ 20%)

C7K0168-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (79% @ 80-120%)

C7K0168-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2-Fluorophenol (22% @ 20%), Di-n-octylphthalate (30% @ 20%)

C7K0168-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (21% @ 20%)

CK70910-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
2-Methylphenol (48% @ 30%)

**No other observations noted.**

**End of Project Narrative.**

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711199

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

## CURRENT SW-846 METHODOLOGY VERSIONS

### Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

### Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711199-01 through 1711199-03**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (X) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | (X) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | ( ) MassDEP EPH CAM IV B | (X) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for '"Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes (X) No ( )* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard  Date: November 20, 2017

Printed Name: Laurel Stoddard  Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | FV | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 11/13/17 22:43 | 2.15 | 100 | CK71043 |
| Arsenic | ND (2.38) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| **Barium** | **2.85** (2.38) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| **Beryllium** | **0.43** (0.10) | | 6010C | | 1 | KJK | 11/14/17 11:47 | 2.15 | 100 | CK71043 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| **Chromium** | **1.03** (0.95) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| **Lead** | **6.52** (4.77) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| Mercury | ND (0.032) | | 7471B | | 1 | MJV | 11/14/17 12:47 | 0.64 | 40 | CK71044 |
| Nickel | ND (2.38) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 11/13/17 22:43 | 2.15 | 100 | CK71043 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| Thallium | ND (0.48) | | 6020A | | 20 | NAR | 11/13/17 22:43 | 2.15 | 100 | CK71043 |
| Vanadium | ND (0.95) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |
| **Zinc** | **5.02** (2.38) | | 6010C | | 1 | KJK | 11/13/17 16:27 | 2.15 | 100 | CK71043 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 1,4-Dioxane | ND (0.101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 2-Butanone | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 2-Hexanone | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| 4-Methyl-2-Pentanone | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Acetone | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Bromomethane | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Chloroethane | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Chloromethane | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Dichlorodifluoromethane | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Methylene Chloride | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Vinyl Chloride | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Xylene P,M | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | C7K0160 | CK70919 |
| Xylenes (Total) | ND (0.0101) | | 8260B Low | | 1 | 11/09/17 19:50 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *97 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *93 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 19.8
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 11/9/17 16:30

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Chlordane (Total) | ND (0.0207) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 11/10/17 13:37 | C7K0147 | CK70909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *67 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *92 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *67 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/17 15:35

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/10/17 12:41 | | CK70821 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *96 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *82 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *89 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 11/9/17 20:50

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.009) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| 2,4,5-TP (Silvex) | ND (0.009) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| 2,4-DB | ND (0.047) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| Dalapon | ND (0.045) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| Dinoseb | ND (0.047) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| MCPA | ND (2.31) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |
| MCPP [2C] | ND (2.34) | | 8151A | | 1 | 11/13/17 20:10 | C7K0198 | CK70954 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *75 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *66 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 1,2-Dichlorobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 1,3-Dichlorobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 1,4-Dichlorobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,4,5-Trichlorophenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,4,6-Trichlorophenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,4-Dichlorophenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,4-Dimethylphenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,4-Dinitrophenol | ND (1.76) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,4-Dinitrotoluene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2,6-Dinitrotoluene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2-Chloronaphthalene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2-Chlorophenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2-Methylnaphthalene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2-Methylphenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 2-Nitrophenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 3,3′-Dichlorobenzidine | ND (0.703) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 3+4-Methylphenol | ND (0.703) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 4-Bromophenyl-phenylether | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 4-Chloroaniline | ND (0.703) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| 4-Nitrophenol | ND (1.76) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Acenaphthene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Acenaphthylene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Acetophenone | ND (0.703) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Aniline | ND (1.76) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Anthracene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Azobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Benzo(a)anthracene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Benzo(a)pyrene | ND (0.176) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Benzo(b)fluoranthene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Benzo(g,h,i)perylene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Benzo(k)fluoranthene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| bis(2-Chloroethyl)ether | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| bis(2-chloroisopropyl)Ether | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| bis(2-Ethylhexyl)phthalate | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Butylbenzylphthalate | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Chrysene | ND (0.176) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Dibenzo(a,h)Anthracene | ND (0.176) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Dibenzofuran | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Diethylphthalate | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Dimethylphthalate | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Di-n-butylphthalate | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Di-n-octylphthalate | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Fluoranthene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Fluorene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Hexachlorobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Hexachlorobutadiene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Hexachloroethane | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Indeno(1,2,3-cd)Pyrene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Isophorone | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Naphthalene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Nitrobenzene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| N-Nitrosodimethylamine | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Pentachlorophenol | ND (1.76) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Phenanthrene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Phenol | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |
| Pyrene | ND (0.351) | | 8270D | | 1 | 11/09/17 20:58 | C7K0149 | CK70910 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *77 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *81 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *89 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *91 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 98
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Nitrobenzene-d5* | | *79 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *84 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *86 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Total Organic Carbon (Average)** | **819** (332) | | 9060 | | 1 | DEL | 11/14/17 23:10 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | FV | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.43) | | 6020A | | 20 | NAR | 11/13/17 22:49 | 2.61 | 100 | CK71043 |
| **Arsenic** | **9.95** (2.15) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| **Barium** | **19.5** (2.15) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| **Beryllium** | **0.44** (0.09) | | 6010C | | 1 | KJK | 11/14/17 11:51 | 2.61 | 100 | CK71043 |
| Cadmium | ND (0.43) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| **Chromium** | **54.2** (0.86) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| **Lead** | **19.7** (4.30) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| Mercury | ND (0.029) | | 7471B | | 1 | MJV | 11/14/17 12:49 | 0.76 | 40 | CK71044 |
| **Nickel** | **24.1** (2.15) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| Selenium | ND (0.43) | | 6020A | | 20 | NAR | 11/13/17 22:49 | 2.61 | 100 | CK71043 |
| Silver | ND (0.43) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| Thallium | ND (0.43) | | 6020A | | 20 | NAR | 11/13/17 22:49 | 2.61 | 100 | CK71043 |
| **Vanadium** | **17.5** (0.86) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |
| **Zinc** | **29.9** (2.15) | | 6010C | | 1 | KJK | 11/13/17 16:31 | 2.61 | 100 | CK71043 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,1,1-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,1,2,2-Tetrachloroethane | ND (0.0019) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,1,2-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,1-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,1-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,1-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2,3-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2,3-Trichloropropane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2,4-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2,4-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2-Dibromoethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,3,5-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,3-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,3-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,4-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 1,4-Dioxane | ND (0.0951) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 2,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 2-Butanone | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 2-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 2-Hexanone | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 4-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 4-Isopropyltoluene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| 4-Methyl-2-Pentanone | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Acetone | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Benzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Bromobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Bromochloromethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Bromoform | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Bromomethane | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Carbon Disulfide | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Carbon Tetrachloride | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Chlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Chloroethane | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Chloroform | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Chloromethane | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| cis-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| cis-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Dibromochloromethane | ND (0.0019) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Dibromomethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Dichlorodifluoromethane | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Diethyl Ether | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Di-isopropyl ether | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Ethyl tertiary-butyl ether | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Ethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Hexachlorobutadiene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Isopropylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Methyl tert-Butyl Ether | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Methylene Chloride | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Naphthalene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| n-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| n-Propylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| sec-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Styrene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| tert-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Tertiary-amyl methyl ether | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Tetrachloroethene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Tetrahydrofuran | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Toluene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| trans-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Trichloroethene | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Trichlorofluoromethane | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Vinyl Chloride | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Xylene O | ND (0.0048) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Xylene P,M | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | C7K0160 | CK70919 |
| Xylenes (Total) | ND (0.0095) | | 8260B Low | | 1 | 11/09/17 20:16 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *98 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *94 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 11/9/17 16:30

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Chlordane (Total) | ND (0.0235) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| gamma-BHC (Lindane) | ND (0.0018) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 11/10/17 15:02 | C7K0147 | CK70909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *74 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *67 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *70 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/17 16:30

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 11/10/17 13:55 | | CK70906 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *92 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *84 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 11/9/17 20:50

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| 2,4-DB | ND (0.051) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| Dalapon | ND (0.049) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| Dinoseb | ND (0.051) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| MCPA | ND (2.51) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |
| MCPP | # ND (2.54) | | 8151A | | 1 | 11/13/17 20:38 | C7K0198 | CK70954 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *79 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 1,2-Dichlorobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 1,3-Dichlorobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 1,4-Dichlorobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,4,5-Trichlorophenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,4,6-Trichlorophenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,4-Dichlorophenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,4-Dimethylphenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,4-Dinitrophenol | ND (1.86) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,4-Dinitrotoluene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2,6-Dinitrotoluene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2-Chloronaphthalene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2-Chlorophenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2-Methylnaphthalene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2-Methylphenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 2-Nitrophenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 3,3′-Dichlorobenzidine | ND (0.744) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 3+4-Methylphenol | ND (0.744) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 4-Bromophenyl-phenylether | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 4-Chloroaniline | ND (0.744) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| 4-Nitrophenol | ND (1.86) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Acenaphthene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Acenaphthylene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Acetophenone | ND (0.744) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Aniline | ND (1.86) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Anthracene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Azobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Benzo(a)anthracene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Benzo(a)pyrene | ND (0.186) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Benzo(b)fluoranthene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Benzo(g,h,i)perylene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Benzo(k)fluoranthene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| bis(2-Chloroethyl)ether | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| bis(2-chloroisopropyl)Ether | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| bis(2-Ethylhexyl)phthalate | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Butylbenzylphthalate | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Chrysene | ND (0.186) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Dibenzo(a,h)Anthracene | ND (0.186) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Dibenzofuran | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Diethylphthalate | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Dimethylphthalate | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Di-n-butylphthalate | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Di-n-octylphthalate | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Fluoranthene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Fluorene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Hexachlorobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Hexachlorobutadiene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Hexachloroethane | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Indeno(1,2,3-cd)Pyrene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Isophorone | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Naphthalene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Nitrobenzene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| N-Nitrosodimethylamine | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Pentachlorophenol | ND (1.86) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Phenanthrene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Phenol | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |
| Pyrene | ND (0.371) | | 8270D | | 1 | 11/09/17 21:32 | C7K0149 | CK70910 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *60 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *63 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *63 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorophenol* | *74 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06
Percent Solids: 89
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/9/17 11:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: Nitrobenzene-d5* | | *60 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *75 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *77 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C Capping Sand
Date Sampled: 11/08/17 12:06

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Total Organic Carbon (Average)** | **1140** (357) | | 9060 | | 1 | DEL | 11/14/17 23:27 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/08/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-03
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 1,4-Dioxane | ND (0.100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 2-Butanone | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 2-Hexanone | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| 4-Methyl-2-Pentanone | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Acetone | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/08/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-03
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Bromomethane | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Chloroethane | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Chloromethane | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Dichlorodifluoromethane | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Methylene Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/08/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711199
ESS Laboratory Sample ID: 1711199-03
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Vinyl Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Xylene P,M | ND (0.0100) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |
| Xylenes (Total) | ND (0.0075) | | 8260B Low | | 1 | 11/09/17 17:19 | C7K0160 | CK70919 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *94 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *91 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CK71043 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 59.9 | 3.85 | mg/kg wet | 48.00 | | 125 | 0-238 | | | |
| Arsenic | 117 | 7.69 | mg/kg wet | 123.0 | | 95 | 80-120 | | | |
| Barium | 240 | 7.69 | mg/kg wet | 253.0 | | 95 | 66-134 | | | |
| Beryllium | 184 | 0.34 | mg/kg wet | 192.0 | | 96 | 80-120 | | | |
| Cadmium | 194 | 1.54 | mg/kg wet | 224.0 | | 87 | 80-120 | | | |
| Chromium | 172 | 3.08 | mg/kg wet | 179.0 | | 96 | 80-120 | | | |
| Lead | 139 | 15.4 | mg/kg wet | 145.0 | | 96 | 80-120 | | | |
| Nickel | 127 | 7.69 | mg/kg wet | 143.0 | | 89 | 80-120 | | | |
| Selenium | 47.6 | 3.85 | mg/kg wet | 42.40 | | 112 | 80-120 | | | |
| Silver | 83.0 | 1.54 | mg/kg wet | 81.60 | | 102 | 80-120 | | | |
| Thallium | 56.0 | 3.85 | mg/kg wet | 52.00 | | 108 | 80-120 | | | |
| Vanadium | 68.6 | 3.08 | mg/kg wet | 72.30 | | 95 | 80-120 | | | |
| Zinc | 701 | 7.69 | mg/kg wet | 770.0 | | 91 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 54.4 | 3.73 | mg/kg wet | 48.00 | | 113 | 80-120 | 10 | 30 | |
| Arsenic | 117 | 7.46 | mg/kg wet | 123.0 | | 95 | 80-120 | 0.2 | 20 | |
| Barium | 197 | 7.46 | mg/kg wet | 253.0 | | 78 | 66-134 | 20 | 20 | |
| Beryllium | 183 | 0.33 | mg/kg wet | 192.0 | | 95 | 80-120 | 0.7 | 20 | |
| Cadmium | 190 | 1.49 | mg/kg wet | 224.0 | | 85 | 80-120 | 2 | 20 | |
| Chromium | 169 | 2.99 | mg/kg wet | 179.0 | | 94 | 80-120 | 2 | 20 | |
| Lead | 139 | 14.9 | mg/kg wet | 145.0 | | 96 | 80-120 | 0.2 | 20 | |
| Nickel | 125 | 7.46 | mg/kg wet | 143.0 | | 88 | 80-120 | 2 | 20 | |
| Selenium | 45.4 | 3.73 | mg/kg wet | 42.40 | | 107 | 80-120 | 5 | 30 | |
| Silver | 80.5 | 1.49 | mg/kg wet | 81.60 | | 99 | 80-120 | 3 | 20 | |
| Thallium | 54.2 | 3.73 | mg/kg wet | 52.00 | | 104 | 80-120 | 3 | 30 | |
| Vanadium | 67.8 | 2.99 | mg/kg wet | 72.30 | | 94 | 80-120 | 1 | 20 | |
| Zinc | 685 | 7.46 | mg/kg wet | 770.0 | | 89 | 80-120 | 2 | 20 | |
| **Reference** | | | | | | | | | | |
| Lead | 3850 | 14.5 | mg/kg wet | 4490 | | 86 | 83-113 | | | |
| **Batch CK71044 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CK71044 - 7471B** | | | | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 2.97 | 0.629 | mg/kg wet | 2.900 | | 102 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 2.99 | 0.649 | mg/kg wet | 2.900 | | 103 | 80-120 | 0.8 | 20 | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CK70919 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK70919 - 5035** | | | | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0482* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0487* | | mg/kg wet | *0.05000* | | *97* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0467* | | mg/kg wet | *0.05000* | | *93* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0491* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0415 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0516 | 0.0020 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK70919 - 5035** | | | | | | | | | | |
| 1,1-Dichloroethane | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0571 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0544 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0571 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0574 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0558 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0574 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0544 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0543 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0559 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0568 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,4-Dioxane | 0.800 | 0.100 | mg/kg wet | 1.000 | | 80 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 2-Butanone | 0.250 | 0.0100 | mg/kg wet | 0.2500 | | 100 | 70-130 | | | |
| 2-Chlorotoluene | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 2-Hexanone | 0.263 | 0.0100 | mg/kg wet | 0.2500 | | 105 | 70-130 | | | |
| 4-Chlorotoluene | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0559 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.222 | 0.0100 | mg/kg wet | 0.2500 | | 89 | 70-130 | | | |
| Acetone | 0.241 | 0.0100 | mg/kg wet | 0.2500 | | 97 | 70-130 | | | |
| Benzene | 0.0538 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Bromobenzene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromochloromethane | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Bromodichloromethane | 0.0423 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| Bromoform | 0.0396 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Bromomethane | 0.0566 | 0.0100 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| Carbon Disulfide | 0.0592 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| Carbon Tetrachloride | 0.0404 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | | | |
| Chlorobenzene | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Chloroethane | 0.0521 | 0.0100 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Chloroform | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Chloromethane | 0.0445 | 0.0100 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Dibromochloromethane | 0.0400 | 0.0020 | mg/kg wet | 0.05000 | | 80 | 70-130 | | | |
| Dibromomethane | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0431 | 0.0100 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Diethyl Ether | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Di-isopropyl ether | 0.0624 | 0.0050 | mg/kg wet | 0.05000 | | 125 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK70919 - 5035** | | | | | | | | | | |
| Ethylbenzene | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Hexachlorobutadiene | 0.0554 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Isopropylbenzene | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0591 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| Methylene Chloride | 0.0528 | 0.0100 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Naphthalene | 0.0565 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| n-Butylbenzene | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | | | |
| n-Propylbenzene | 0.0546 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| sec-Butylbenzene | 0.0559 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | | | |
| Styrene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| tert-Butylbenzene | 0.0551 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Tetrachloroethene | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Tetrahydrofuran | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Toluene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0556 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0415 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| Trichloroethene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Trichlorofluoromethane | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Vinyl Chloride | 0.0499 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Xylene O | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Xylene P,M | 0.0966 | 0.0100 | mg/kg wet | 0.1000 | | 97 | 70-130 | | | |
| Xylenes (Total) | 0.146 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0527* | | mg/kg wet | *0.05000* | | *105* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0507* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0512* | | mg/kg wet | *0.05000* | | *102* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0514* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0430 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | 4 | 20 | |
| 1,1,1-Trichloroethane | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 0.04 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0507 | 0.0020 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| 1,1,2-Trichloroethane | 0.0447 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 0.8 | 20 | |
| 1,1-Dichloroethane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.3 | 20 | |
| 1,1-Dichloroethene | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 0.5 | 20 | |
| 1,1-Dichloropropene | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 0.4 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 0.4 | 20 | |
| 1,2,3-Trichloropropane | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0566 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 1 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0553 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | 1 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 0.4 | 20 | |
| 1,2-Dibromoethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 3 | 20 | |
| 1,2-Dichlorobenzene | 0.0570 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 0.7 | 20 | |
| 1,2-Dichloroethane | 0.0550 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | 1 | 20 | |
| 1,2-Dichloropropane | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 0.9 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0536 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 1 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK70919 - 5035** | | | | | | | | | | |
| 1,3-Dichlorobenzene | 0.0560 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | 0.1 | 20 | |
| 1,3-Dichloropropane | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 2 | 20 | |
| 1,4-Dichlorobenzene | 0.0558 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | 2 | 20 | |
| 1,4-Dioxane | 0.732 | 0.100 | mg/kg wet | 1.000 | | 73 | 70-130 | 9 | 20 | |
| 2,2-Dichloropropane | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 0.2 | 20 | |
| 2-Butanone | 0.249 | 0.0100 | mg/kg wet | 0.2500 | | 99 | 70-130 | 0.6 | 20 | |
| 2-Chlorotoluene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 3 | 20 | |
| 2-Hexanone | 0.264 | 0.0100 | mg/kg wet | 0.2500 | | 105 | 70-130 | 0.2 | 20 | |
| 4-Chlorotoluene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 0.1 | 20 | |
| 4-Isopropyltoluene | 0.0551 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | 2 | 20 | |
| 4-Methyl-2-Pentanone | 0.220 | 0.0100 | mg/kg wet | 0.2500 | | 88 | 70-130 | 0.8 | 20 | |
| Acetone | 0.234 | 0.0100 | mg/kg wet | 0.2500 | | 94 | 70-130 | 3 | 20 | |
| Benzene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 0.4 | 20 | |
| Bromobenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 0.6 | 20 | |
| Bromochloromethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 0.8 | 20 | |
| Bromodichloromethane | 0.0430 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | 2 | 20 | |
| Bromoform | 0.0410 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | 3 | 20 | |
| Bromomethane | 0.0560 | 0.0100 | mg/kg wet | 0.05000 | | 112 | 70-130 | 1 | 20 | |
| Carbon Disulfide | 0.0592 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | 0.03 | 20 | |
| Carbon Tetrachloride | 0.0406 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | 0.5 | 20 | |
| Chlorobenzene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| Chloroethane | 0.0513 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Chloroform | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 0.7 | 20 | |
| Chloromethane | 0.0435 | 0.0100 | mg/kg wet | 0.05000 | | 87 | 70-130 | 2 | 20 | |
| cis-1,2-Dichloroethene | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 0.2 | 20 | |
| cis-1,3-Dichloropropene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 0.9 | 20 | |
| Dibromochloromethane | 0.0416 | 0.0020 | mg/kg wet | 0.05000 | | 83 | 70-130 | 4 | 20 | |
| Dibromomethane | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 0.5 | 20 | |
| Dichlorodifluoromethane | 0.0420 | 0.0100 | mg/kg wet | 0.05000 | | 84 | 70-130 | 3 | 20 | |
| Diethyl Ether | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 1 | 20 | |
| Di-isopropyl ether | 0.0632 | 0.0050 | mg/kg wet | 0.05000 | | 126 | 70-130 | 1 | 20 | |
| Ethyl tertiary-butyl ether | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 1 | 20 | |
| Ethylbenzene | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| Hexachlorobutadiene | 0.0576 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 4 | 20 | |
| Isopropylbenzene | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 1 | 20 | |
| Methyl tert-Butyl Ether | 0.0596 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | 0.8 | 20 | |
| Methylene Chloride | 0.0531 | 0.0100 | mg/kg wet | 0.05000 | | 106 | 70-130 | 0.5 | 20 | |
| Naphthalene | 0.0565 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 0.04 | 20 | |
| n-Butylbenzene | 0.0567 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 1 | 20 | |
| n-Propylbenzene | 0.0538 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 1 | 20 | |
| sec-Butylbenzene | 0.0550 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | 2 | 20 | |
| Styrene | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| tert-Butylbenzene | 0.0543 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 1 | 20 | |
| Tertiary-amyl methyl ether | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 1 | 20 | |
| Tetrachloroethene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CK70919 - 5035** | | | | | | | | | | |
| Tetrahydrofuran | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| Toluene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 0 | 20 | |
| trans-1,2-Dichloroethene | 0.0553 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | 0.5 | 20 | |
| trans-1,3-Dichloropropene | 0.0422 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | 2 | 20 | |
| Trichloroethene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 0.08 | 20 | |
| Trichlorofluoromethane | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 1 | 20 | |
| Vinyl Chloride | 0.0497 | 0.0100 | mg/kg wet | 0.05000 | | 99 | 70-130 | 0.4 | 20 | |
| Xylene O | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 1 | 20 | |
| Xylene P,M | 0.0975 | 0.0100 | mg/kg wet | 0.1000 | | 98 | 70-130 | 1 | 20 | |
| Xylenes (Total) | 0.147 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0525* | | mg/kg wet | *0.05000* | | *105* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0519* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0514* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0526* | | mg/kg wet | *0.05000* | | *105* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK70909 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK70909 - 3546** | | | | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0115* | | mg/kg wet | *0.01250* | | *92* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0124* | | mg/kg wet | *0.01250* | | *99* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0105* | | mg/kg wet | *0.01250* | | *84* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0107* | | mg/kg wet | *0.01250* | | *85* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| 4,4´-DDE | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| 4,4´-DDT | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Aldrin | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Aldrin [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| alpha-BHC | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| alpha-BHC [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| alpha-Chlordane | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| beta-BHC | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| beta-BHC [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| delta-BHC | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| delta-BHC [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Dieldrin | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| Dieldrin [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| Endosulfan I | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Endosulfan I [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| Endosulfan II | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Endosulfan II [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan Sulfate | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endrin | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Endrin [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8081B Organochlorine Pesticides | | | | | | | | | | |
| **Batch CK70909 - 3546** | | | | | | | | | | |
| Endrin Ketone | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0104 | 0.0015 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0108 | 0.0015 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| gamma-Chlordane | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Heptachlor | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Heptachlor [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Heptachlor Epoxide | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Hexachlorobenzene | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | | | |
| Methoxychlor | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Methoxychlor [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0119* | | mg/kg wet | *0.01250* | | *95* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0128* | | mg/kg wet | *0.01250* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0109* | | mg/kg wet | *0.01250* | | *87* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0109* | | mg/kg wet | *0.01250* | | *87* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 3 | 30 | |
| 4,4´-DDD [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 3 | 30 | |
| 4,4´-DDE | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 4 | 30 | |
| 4,4´-DDE [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 3 | 30 | |
| 4,4´-DDT | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 1 | 30 | |
| 4,4´-DDT [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 2 | 30 | |
| Aldrin | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 3 | 30 | |
| Aldrin [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 3 | 30 | |
| alpha-BHC | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 2 | 30 | |
| alpha-BHC [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 2 | 30 | |
| alpha-Chlordane | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 4 | 30 | |
| alpha-Chlordane [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 3 | 30 | |
| beta-BHC | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 3 | 30 | |
| beta-BHC [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 2 | 30 | |
| delta-BHC | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 3 | 30 | |
| delta-BHC [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 3 | 30 | |
| Dieldrin | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 4 | 30 | |
| Dieldrin [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 3 | 30 | |
| Endosulfan I | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 3 | 30 | |
| Endosulfan I [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 3 | 30 | |
| Endosulfan II | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 4 | 30 | |
| Endosulfan II [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 4 | 30 | |
| Endosulfan Sulfate | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 4 | 30 | |
| Endosulfan Sulfate [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 4 | 30 | |
| Endrin | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 0.03 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK70909 - 3546** | | | | | | | | | | |
| Endrin [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 3 | 30 | |
| Endrin Ketone | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 4 | 30 | |
| Endrin Ketone [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 3 | 30 | |
| gamma-BHC (Lindane) | 0.0107 | 0.0015 | mg/kg wet | 0.01250 | | 86 | 40-140 | 3 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0111 | 0.0015 | mg/kg wet | 0.01250 | | 89 | 40-140 | 2 | 30 | |
| gamma-Chlordane | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 4 | 30 | |
| gamma-Chlordane [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 3 | 30 | |
| Heptachlor | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 3 | 30 | |
| Heptachlor [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 2 | 30 | |
| Heptachlor Epoxide | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 4 | 30 | |
| Heptachlor Epoxide [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 2 | 30 | |
| Hexachlorobenzene | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 2 | 30 | |
| Hexachlorobenzene [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 1 | 30 | |
| Methoxychlor | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 1 | 30 | |
| Methoxychlor [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 1 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0118* | | mg/kg wet | *0.01250* | | *95* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0127* | | mg/kg wet | *0.01250* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0109* | | mg/kg wet | *0.01250* | | *87* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0108* | | mg/kg wet | *0.01250* | | *86* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK70821 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0228* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0266* | | mg/kg wet | *0.02500* | | *107* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CK70821 - 3540C** | | | | | | | | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0191* | | mg/kg wet | *0.02500* | | *76* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0209* | | mg/kg wet | *0.02500* | | *83* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | | | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 87 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 98 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0222* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0255* | | mg/kg wet | *0.02500* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0212* | | mg/kg wet | *0.02500* | | *85* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0207* | | mg/kg wet | *0.02500* | | *83* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | 0.2 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | 0.7 | 30 | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 86 | 40-140 | 2 | 30 | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 96 | 40-140 | 2 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0216* | | mg/kg wet | *0.02500* | | *86* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0248* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0214* | | mg/kg wet | *0.02500* | | *86* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0205* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| **Batch CK70906 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0204* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0222* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK70906 - 3540C** | | | | | | | | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0175* | | mg/kg wet | *0.02500* | | *70* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0201* | | mg/kg wet | *0.02500* | | *80* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 89 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 86 | 40-140 | | | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 85 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 83 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0214* | | mg/kg wet | *0.02500* | | *86* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0232* | | mg/kg wet | *0.02500* | | *93* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0202* | | mg/kg wet | *0.02500* | | *81* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0204* | | mg/kg wet | *0.02500* | | *81* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | 3 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 91 | 40-140 | 6 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | 8 | 30 | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | 8 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0225* | | mg/kg wet | *0.02500* | | *90* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0245* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0228* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0212* | | mg/kg wet | *0.02500* | | *85* | *30-150* | | | |
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CK70954 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CK70954 - 3546** | | | | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.212* | | mg/kg wet | *0.2000* | | *106* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.171* | | mg/kg wet | *0.2000* | | *85* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 76 | 40-140 | | | |
| 2,4,5-T [2C] | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 66 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 82 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 64 | 40-140 | | | |
| 2,4-D | 0.154 | 0.047 | mg/kg wet | 0.1880 | | 82 | 40-140 | | | |
| 2,4-D [2C] | 0.129 | 0.047 | mg/kg wet | 0.1880 | | 69 | 40-140 | | | |
| 2,4-DB | 0.155 | 0.048 | mg/kg wet | 0.1900 | | 82 | 40-140 | | | |
| 2,4-DB [2C] | 0.127 | 0.048 | mg/kg wet | 0.1900 | | 67 | 40-140 | | | |
| Dalapon | 0.260 | 0.046 | mg/kg wet | 0.4550 | | 57 | 40-140 | | | |
| Dalapon [2C] | 0.257 | 0.046 | mg/kg wet | 0.4550 | | 57 | 40-140 | | | |
| Dicamba | 0.014 | 0.009 | mg/kg wet | 0.01880 | | 76 | 40-140 | | | |
| Dicamba [2C] | 0.013 | 0.009 | mg/kg wet | 0.01880 | | 70 | 40-140 | | | |
| Dichlorprop | 0.174 | 0.047 | mg/kg wet | 0.1880 | | 93 | 40-140 | | | |
| Dichlorprop [2C] | 0.130 | 0.047 | mg/kg wet | 0.1880 | | 69 | 40-140 | | | |
| Dinoseb | 0.014 | 0.048 | mg/kg wet | 0.09500 | | 14 | 10-100 | | | |
| Dinoseb [2C] | 0.020 | 0.048 | mg/kg wet | 0.09500 | | 21 | 10-100 | | | |
| MCPA | 17.1 | 2.32 | mg/kg wet | 18.60 | | 92 | 40-140 | | | |
| MCPA [2C] | 14.6 | 2.32 | mg/kg wet | 18.60 | | 78 | 40-140 | | | |
| MCPP | 15.8 | 2.35 | mg/kg wet | 18.80 | | 84 | 40-140 | | | |
| MCPP [2C] | 15.4 | 2.35 | mg/kg wet | 18.80 | | 82 | 40-140 | | | |
| *Surrogate: DCAA* | *0.193* | | mg/kg wet | *0.2000* | | *96* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.156* | | mg/kg wet | *0.2000* | | *78* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 88 | 40-140 | 15 | 30 | |
| 2,4,5-T [2C] | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 76 | 40-140 | 14 | 30 | |
| 2,4,5-TP (Silvex) | 0.018 | 0.010 | mg/kg wet | 0.01900 | | 94 | 40-140 | 14 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 76 | 40-140 | 17 | 30 | |
| 2,4-D | 0.183 | 0.047 | mg/kg wet | 0.1880 | | 98 | 40-140 | 17 | 30 | |
| 2,4-D [2C] | 0.161 | 0.047 | mg/kg wet | 0.1880 | | 85 | 40-140 | 22 | 30 | |
| 2,4-DB | 0.166 | 0.048 | mg/kg wet | 0.1900 | | 87 | 40-140 | 7 | 30 | |
| 2,4-DB [2C] | 0.140 | 0.048 | mg/kg wet | 0.1900 | | 74 | 40-140 | 9 | 30 | |
| Dalapon | 0.310 | 0.046 | mg/kg wet | 0.4550 | | 68 | 40-140 | 18 | 30 | |
| Dalapon [2C] | 0.298 | 0.046 | mg/kg wet | 0.4550 | | 66 | 40-140 | 15 | 30 | |
| Dicamba | 0.016 | 0.009 | mg/kg wet | 0.01880 | | 86 | 40-140 | 12 | 30 | |
| Dicamba [2C] | 0.016 | 0.009 | mg/kg wet | 0.01880 | | 86 | 40-140 | 21 | 30 | |
| Dichlorprop | 0.204 | 0.047 | mg/kg wet | 0.1880 | | 109 | 40-140 | 16 | 30 | |
| Dichlorprop [2C] | 0.155 | 0.047 | mg/kg wet | 0.1880 | | 82 | 40-140 | 18 | 30 | |
| Dinoseb | 0.020 | 0.048 | mg/kg wet | 0.09500 | | 21 | 10-100 | 36 | 30 | D+ |
| Dinoseb [2C] | 0.024 | 0.048 | mg/kg wet | 0.09500 | | 25 | 10-100 | 18 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CK70954 - 3546** | | | | | | | | | | |
| MCPA | 20.5 | 2.32 | mg/kg wet | 18.60 | | 110 | 40-140 | 18 | 30 | |
| MCPA [2C] | 15.6 | 2.32 | mg/kg wet | 18.60 | | 84 | 40-140 | 7 | 30 | |
| MCPP | 18.5 | 2.35 | mg/kg wet | 18.80 | | 98 | 40-140 | 16 | 30 | |
| MCPP [2C] | 18.0 | 2.35 | mg/kg wet | 18.80 | | 96 | 40-140 | 15 | 30 | |
| *Surrogate: DCAA* | *0.215* | | mg/kg wet | *0.2000* | | *108* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.168* | | mg/kg wet | *0.2000* | | *84* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70910 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70910 - 3546** | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.34* | | mg/kg wet | *3.333* | | *70* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.95* | | mg/kg wet | *5.000* | | *79* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *4.24* | | mg/kg wet | *5.000* | | *85* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.83* | | mg/kg wet | *3.333* | | *85* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *4.22* | | mg/kg wet | *5.000* | | *84* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.70* | | mg/kg wet | *3.333* | | *81* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *4.36* | | mg/kg wet | *5.000* | | *87* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *4.04* | | mg/kg wet | *3.333* | | *121* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.51 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.41 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.29 | 1.67 | mg/kg wet | 3.333 | | 69 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| 2-Chloronaphthalene | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70910 - 3546** | | | | | | | | | | |
| 2-Chlorophenol | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | | | |
| 2-Methylnaphthalene | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| 2-Methylphenol | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| 2-Nitrophenol | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.18 | 0.667 | mg/kg wet | 3.333 | | 65 | 40-140 | | | |
| 3+4-Methylphenol | 5.07 | 0.667 | mg/kg wet | 6.667 | | 76 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| 4-Chloroaniline | 2.12 | 0.667 | mg/kg wet | 3.333 | | 64 | 40-140 | | | |
| 4-Nitrophenol | 2.65 | 1.67 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| Acenaphthene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Acenaphthylene | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Acetophenone | 2.50 | 0.667 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| Aniline | 2.02 | 1.67 | mg/kg wet | 3.333 | | 61 | 40-140 | | | |
| Anthracene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Azobenzene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Benzo(a)anthracene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Benzo(a)pyrene | 3.00 | 0.167 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Benzo(b)fluoranthene | 3.05 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Benzo(g,h,i)perylene | 2.96 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.26 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Butylbenzylphthalate | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Chrysene | 2.80 | 0.167 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 2.95 | 0.167 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Dibenzofuran | 2.72 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| Diethylphthalate | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Dimethylphthalate | 2.81 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Di-n-butylphthalate | 3.02 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Di-n-octylphthalate | 3.55 | 0.333 | mg/kg wet | 3.333 | | 106 | 40-140 | | | |
| Fluoranthene | 3.15 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Fluorene | 2.93 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Hexachlorobenzene | 2.77 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Hexachlorobutadiene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Hexachloroethane | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Isophorone | 2.24 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| Naphthalene | 2.51 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| Nitrobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| N-Nitrosodimethylamine | 2.18 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | | | |
| Pentachlorophenol | 2.72 | 1.67 | mg/kg wet | 3.333 | | 82 | 30-130 | | | |
| Phenanthrene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Phenol | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 30-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

## 8270D Semi-Volatile Organic Compounds

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CK70910 - 3546** | | | | | | | | | | |
| Pyrene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.44* | | mg/kg wet | *3.333* | | *73* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.38* | | mg/kg wet | *5.000* | | *88* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.89* | | mg/kg wet | *5.000* | | *78* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.80* | | mg/kg wet | *3.333* | | *84* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *4.45* | | mg/kg wet | *5.000* | | *89* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.60* | | mg/kg wet | *3.333* | | *78* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.88* | | mg/kg wet | *5.000* | | *78* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.07* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 15 | 30 | |
| 1,2-Dichlorobenzene | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | 17 | 30 | |
| 1,3-Dichlorobenzene | 2.03 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | 16 | 30 | |
| 1,4-Dichlorobenzene | 2.01 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | 16 | 30 | |
| 2,4,5-Trichlorophenol | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | 13 | 30 | |
| 2,4,6-Trichlorophenol | 2.30 | 0.333 | mg/kg wet | 3.333 | | 69 | 30-130 | 14 | 30 | |
| 2,4-Dichlorophenol | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 30-130 | 15 | 30 | |
| 2,4-Dimethylphenol | 2.11 | 0.333 | mg/kg wet | 3.333 | | 63 | 30-130 | 15 | 30 | |
| 2,4-Dinitrophenol | 2.02 | 1.67 | mg/kg wet | 3.333 | | 61 | 30-130 | 12 | 30 | |
| 2,4-Dinitrotoluene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 13 | 30 | |
| 2,6-Dinitrotoluene | 2.25 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 11 | 30 | |
| 2-Chloronaphthalene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 16 | 30 | |
| 2-Chlorophenol | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 30-130 | 15 | 30 | |
| 2-Methylnaphthalene | 2.17 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 18 | 30 | |
| 2-Methylphenol | 1.65 | 0.333 | mg/kg wet | 3.333 | | 49 | 30-130 | 48 | 30 | D+ |
| 2-Nitrophenol | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 30-130 | 13 | 30 | |
| 3,3´-Dichlorobenzidine | 2.03 | 0.667 | mg/kg wet | 3.333 | | 61 | 40-140 | 7 | 30 | |
| 3+4-Methylphenol | 4.31 | 0.667 | mg/kg wet | 6.667 | | 65 | 30-130 | 16 | 30 | |
| 4-Bromophenyl-phenylether | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 15 | 30 | |
| 4-Chloroaniline | 2.00 | 0.667 | mg/kg wet | 3.333 | | 60 | 40-140 | 6 | 30 | |
| 4-Nitrophenol | 2.21 | 1.67 | mg/kg wet | 3.333 | | 66 | 30-130 | 18 | 30 | |
| Acenaphthene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 3 | 30 | |
| Acenaphthylene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 17 | 30 | |
| Acetophenone | 2.14 | 0.667 | mg/kg wet | 3.333 | | 64 | 40-140 | 16 | 30 | |
| Aniline | 1.97 | 1.67 | mg/kg wet | 3.333 | | 59 | 40-140 | 2 | 30 | |
| Anthracene | 2.43 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 14 | 30 | |
| Azobenzene | 2.17 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 15 | 30 | |
| Benzo(a)anthracene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 15 | 30 | |
| Benzo(a)pyrene | 2.58 | 0.167 | mg/kg wet | 3.333 | | 77 | 40-140 | 15 | 30 | |
| Benzo(b)fluoranthene | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 22 | 30 | |
| Benzo(g,h,i)perylene | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 15 | 30 | |
| Benzo(k)fluoranthene | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 5 | 30 | |
| bis(2-Chloroethoxy)methane | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 14 | 30 | |
| bis(2-Chloroethyl)ether | 1.95 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 15 | 30 | |
| bis(2-chloroisopropyl)Ether | 1.95 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 14 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK70910 - 3546** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | 16 | 30 | |
| Butylbenzylphthalate | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 15 | 30 | |
| Chrysene | 2.42 | 0.167 | mg/kg wet | 3.333 | | 72 | 40-140 | 15 | 30 | |
| Dibenzo(a,h)Anthracene | 2.55 | 0.167 | mg/kg wet | 3.333 | | 77 | 40-140 | 14 | 30 | |
| Dibenzofuran | 2.41 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 12 | 30 | |
| Diethylphthalate | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 15 | 30 | |
| Dimethylphthalate | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | 12 | 30 | |
| Di-n-butylphthalate | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 17 | 30 | |
| Di-n-octylphthalate | 3.02 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 16 | 30 | |
| Fluoranthene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 17 | 30 | |
| Fluorene | 2.45 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 18 | 30 | |
| Hexachlorobenzene | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 14 | 30 | |
| Hexachlorobutadiene | 2.17 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 15 | 30 | |
| Hexachloroethane | 1.98 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 16 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 14 | 30 | |
| Isophorone | 1.98 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 13 | 30 | |
| Naphthalene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 15 | 30 | |
| Nitrobenzene | 2.05 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | 13 | 30 | |
| N-Nitrosodimethylamine | 1.64 | 0.333 | mg/kg wet | 3.333 | | 49 | 40-140 | 28 | 30 | |
| Pentachlorophenol | 2.36 | 1.67 | mg/kg wet | 3.333 | | 71 | 30-130 | 14 | 30 | |
| Phenanthrene | 2.30 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 14 | 30 | |
| Phenol | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 30-130 | 2 | 30 | |
| Pyrene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 13 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.01* | | mg/kg wet | *3.333* | | *60* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.45* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.23* | | mg/kg wet | *5.000* | | *65* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.32* | | mg/kg wet | *3.333* | | *70* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.74* | | mg/kg wet | *5.000* | | *75* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.16* | | mg/kg wet | *3.333* | | *65* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.76* | | mg/kg wet | *5.000* | | *75* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.58* | | mg/kg wet | *3.333* | | *77* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CK71448 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 200 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 9630 | 200 | mg/kg | 10000 | | 96 | 80-120 | | | |
| Total Organic Carbon (2) | 10300 | 200 | mg/kg | 10000 | | 103 | 80-120 | | | |
| Total Organic Carbon (Average) | 9950 | 200 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 9700 | 200 | mg/kg | 10000 | | 97 | 80-120 | 0.8 | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CK71448 - General Preparation** | | | | | | | | | | |
| Total Organic Carbon (2) | 9420 | 200 | mg/kg | 10000 | | 94 | 80-120 | 9 | 200 | |
| Total Organic Carbon (Average) | 9560 | 200 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.40 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711199

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| Z-08 | See Attached |
| XH | Peaks found in the retention time window for MCPP did not confirm by GC/MS. |
| U | Analyte included in the analysis, but not detected |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD+ | Continuing Calibration %Diff/Drift is above control limit (CD+). |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711199

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

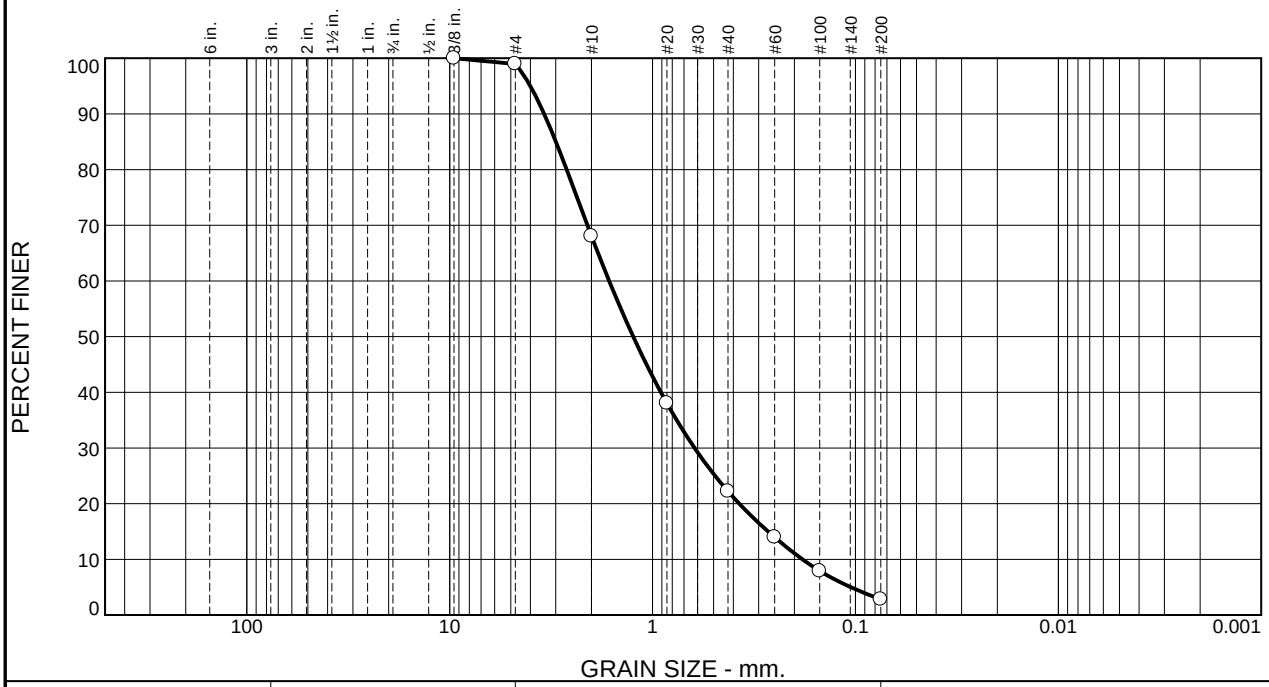
| THIELSCH ENGINEERING | 195 Frances Avenue<br>Cranston RI, 02910<br>Phone: (401)-467-6454<br>Fax: (401)-467-2398<br>http://www.thielsch.com | Client Information:<br>**Charter Contracting**<br><br>**PM: Marc Levesque**<br>Assigned By:<br>**Marc Levesque** | Laboratory Information<br>Project Name:<br>**Wynn Boston Harbor Sediment Remediation**<br>**Boston, MA**<br>ESS Project Number: 1711199<br>Report Date: 11.14.17 |
|---|---|---|---|

# LABORATORY TESTING DATA SHEET

| Boring ID | Sample No. | Depth (ft) | Laboratory No. | Identification Tests | | | | | | | Density | | Strength Tests | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water Content % | LL % | PL % | Gravel % | Sand % | Fines % | Org. % | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) Corrected | CBR Setup as % of Proctor | CBR Dry unit wt. pcf | CBR Water Content % | CBR @ 0.1" @ 0.2" | Laboratory Log and Soil Description |
| Type A Capping Sand | 1711199-01 | Stock. | 17-S-1775 | 3.0 | | | 1.0 | 96.2 | 2.8 | | | | | | | | Light Brown well-graded sand (SW) |
| Type C Capping Sand | 1711199-02 | Stock. | 17-S-1776 | 12.1 | | | 10.2 | 34.6 | 55.2 | | | | | | | | Grey sandy silt (ML) |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Reviewed By _____ Date Reviewed: *11.15.17*

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 30.9 | 45.9 | 19.4 | 2.8 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.0 | | |
| #10 | 68.1 | | |
| #20 | 38.0 | | |
| #40 | 22.2 | | |
| #60 | 14.0 | | |
| #100 | 7.9 | | |
| #200 | 2.8 | | |

* (no specification provided)

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4230 $D_{85}$= 2.9966 $D_{60}$= 1.6368
$D_{50}$= 1.2454 $D_{30}$= 0.6208 $D_{15}$= 0.2694
$D_{10}$= 0.1826 $C_u$= 8.96 $C_c$= 1.29

**Remarks**

**Date Received:** 11/8/17 **Date Tested:** 11/14/17

**Tested By:** RR / JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

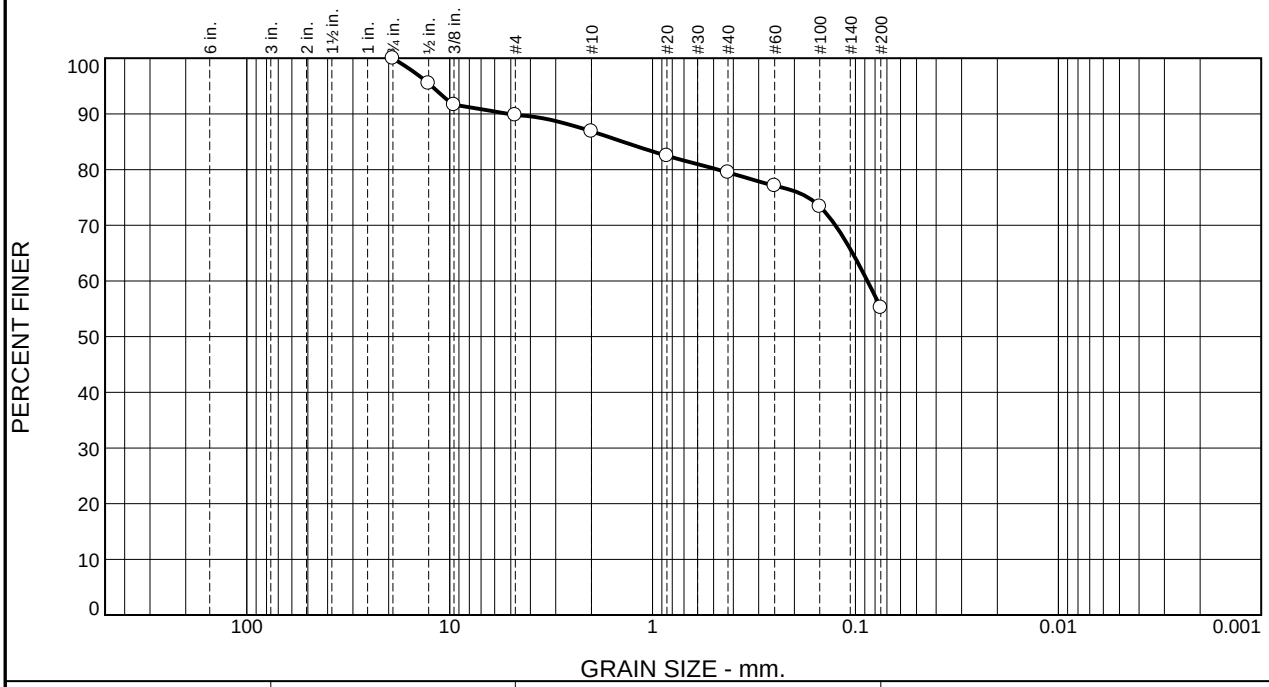
**Source of Sample:** Grab/Composite **Depth:** Stock. **Date Sampled:** 11/8/17
**Sample Number:** Type A Capping Sand

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711199 **Figure** 1711199-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 10.2 | 2.9 | 7.4 | 24.3 | 55.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 95.5 | | |
| 0.375" | 91.6 | | |
| #4 | 89.8 | | |
| #10 | 86.9 | | |
| #20 | 82.5 | | |
| #40 | 79.5 | | |
| #60 | 77.1 | | |
| #100 | 73.4 | | |
| #200 | 55.2 | | |

* (no specification provided)

**Material Description**

Grey sandy silt (ML)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 5.1417 $D_{85}$= 1.4003 $D_{60}$= 0.0873
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

Sample was visually checked for plasticity and appeared non-plastic.

**Date Received:** 11/8/17 **Date Tested:** 11/14/17

**Tested By:** RR / JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Grab/Composite **Depth:** Stock. **Date Sampled:** 11/8/17
**Sample Number:** Type C Capping Sand

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711199 **Figure** 1711199-02

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

## Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

# REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

**Report Prepared Date:**

November 20, 2017

## Report Information:

**Pace Project #: 10410333**
**Sample Receipt Date: 11/09/2017**
**Client Project #: 1711199**
**Client Sub PO #: B02407**
**State Cert #: N/A**

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Joanne Richardson

November 20, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

## Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## DISCUSSION

This report presents the results from the analyses performed on two samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 49-83%. Except for two low values, which were flagged "R" on the results table, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 80-97%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

It should be noted that the samples were analyzed without a previous instrument blank. Since PCDDs and PCDFs were not detected in the field samples at the reporting limits, the reported results were not impacted.



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Minnesota Laboratory Certifications

| Authority | Certificate # | Authority | Certificate # |
|---|---|---|---|
| A2LA | 2926.01 | Mississippi | MN00064 |
| Alabama | 40770 | Montana | CERT0092 |
| Alaska | MN00064 | Nebraska | NE-OS-18-06 |
| Alaska | UST-078 | Nevada | MN00064 |
| Arizona | AZ0014 | New Jersey (NE | MN002 |
| Arkansas | 88-0680 | New York (NEL | 11647 |
| CNMI Saipan | MP0003 | New hampshire | 2081 |
| California | MN00064 | North Carolina | 27700 |
| Colorado | MN00064 | North Carolina | 530 |
| Connecticut | PH-0256 | North Dakota | R-036 |
| EPA Region 8 | 8TMS-L | Ohio | 41244 |
| Florida (NELAP | E87605 | Ohio VAP | CL101 |
| Georgia (EDP) | 959 | Oklahoma | 9507 |
| Guam EPA | 959 | Oregon (ELAP) | MN200001 |
| Hawaii | MN00064 | Oregon (OREL | MN300001 |
| Idaho | MN00064 | Pennsylvania | 68-00563 |
| Illinois | 200011 | Puerto Rico | MN00064 |
| Indiana | C-MN-01 | South Carolina | 74003001 |
| Iowa | 368 | Tennessee | TN02818 |
| Kansas | E-10167 | Texas | T104704192 |
| Kentucky | 90062 | Utah (NELAP) | MN00064 |
| Louisiana | 03086 | Virginia | 460163 |
| Louisiana | MN00064 | Washington | C486 |
| Maine | MN00064 | West Virginia # | 9952C |
| Maryland | 322 | West Virginia D | 382 |
| Michigan | 9909 | Wisconsin | 999407970 |
| Minnesota | 027-053-137 | Wyoming | 8TMS-L |

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Report No.....10410333

# Appendix A

Sample Management

10410333

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1711199

Turn Time **Standard** Other

Regulatory State: **MA** RI CT NH NJ NY ME Other

Is this project for any of the following:(please circle)
**MA-MCP** Navy USACE CT DEP Other

Reporting Limits - **S-1**

Electonic Deliverables *Excel Access *PDF

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1711199 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: ext 3083 | City , State: | Zip: | PO #: B02407 |
| Tel. | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11/8/17 | 1206 | G | S | 1711199-01 | | | | | x | | | | | | | | 061 |
| | 11/8/17 | 1206 | G | S | 1711199-02 | | | | | x | | | | | | | | 062 |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present X Yes ____ No

Seals Intact X Yes ____ No NA:____

Cooler Temperature: 5.2°c

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 11/8/17 1525 | UPS | | |
| | PACE 11/9/17 930 T=5.2°c | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 30Aug2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.21** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS LABORATORY

**Project #:**

WO#: 10410333

10410333

**Courier:** ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 12 037 497 01 4779 4614

**Custody Seal on Cooler/Box Present?** ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

**Thermometer Used:** ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

**Cooler Temp Read (°C):** 5.6 **Cooler Temp Corrected (°C):** 5.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** -0.4 **Date and Initials of Person Examining Contents:** ET 11/9/17

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally including Hawaii and Puerto Rico)? ☐ Yes ☒ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | COMMENTS: |
|---|---|---|
| Chain of Custody Present? | ☒ Yes ☐ No | 1. |
| Chain of Custody Filled Out? | ☒ Yes ☐ No | 2. |
| Chain of Custody Relinquished? | ☒ Yes ☐ No | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes ☒ No ☐ N/A | 4. |
| Samples Arrived within Hold Time? | ☒ Yes ☐ No | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes ☒ No | 6. |
| **Rush Turn Around Time Requested?** | ☐ Yes ☒ No | 7. |
| Sufficient Volume? | ☒ Yes ☐ No | 8. |
| Correct Containers Used? | ☒ Yes ☐ No | 9. |
| -Pace Containers Used? | ☐ Yes ☒ No | |
| Containers Intact? | ☒ Yes ☐ No | 10. |
| Filtered Volume Received for Dissolved Tests? | ☐ Yes ☐ No ☒ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☐ Yes ☒ No | 12. NO DATE + TIME ON LABELS |
| All containers needing acid/base preservation have been checked? | ☐ Yes ☐ No ☒ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N Sample # |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes ☐ No ☒ N/A | |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes ☐ No ☒ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes ☐ No ☒ N/A | 14. |
| Trip Blank Present? | ☐ Yes ☐ No ☒ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes ☐ No ☒ N/A | |
| Pace Trip Blank Lot # (if purchased): | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

**Project Manager Review:** Joanne Richardson **Date:** 11-9-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix B

Sample Analysis  Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711199-01 | | | |
| Lab Sample ID | 10410333001 | | | |
| Filename | F171120A_04 | | | |
| Injected By | ZMS | | | |
| Total Amount Extracted | 11.1 g | Matrix | Solid | |
| % Moisture | 2.6 | Dilution | NA | |
| Dry Weight Extracted | 10.8 g | Collected | 11/08/2017 | 12:06 |
| ICAL ID | F171017 | Received | 11/09/2017 | 09:30 |
| CCal Filename(s) | F171120A_02 & F171120A_06 | Extracted | 11/10/2017 | 17:45 |
| Method Blank ID | BLANK-58686 | Analyzed | 11/20/2017 | 10:55 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 78 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 67 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 79 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 82 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 77 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 56 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 63 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 64 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 66 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 58 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 55 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 52 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 49 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 55 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711199-02 | | | |
| Lab Sample ID | 10410333002 | | | |
| Filename | F171120A_05 | | | |
| Injected By | ZMS | | | |
| Total Amount Extracted | 11.9 g | Matrix | Solid | |
| % Moisture | 10.3 | Dilution | NA | |
| Dry Weight Extracted | 10.7 g | Collected | 11/08/2017 | 12:06 |
| ICAL ID | F171017 | Received | 11/09/2017 | 09:30 |
| CCal Filename(s) | F171120A_02 & F171120A_06 | Extracted | 11/10/2017 | 17:45 |
| Method Blank ID | BLANK-58686 | Analyzed | 11/20/2017 | 11:38 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 74 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 64 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 79 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 83 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 78 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 68 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 70 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 71 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 60 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 59 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 63 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 57 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 60 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 56 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-58686 | Matrix | Solid |
| Filename | F171116B_04 | Dilution | NA |
| Total Amount Extracted | 20.0 g | Extracted | 11/10/2017 17:45 |
| ICAL ID | F171017 | Analyzed | 11/17/2017 00:13 |
| CCal Filename(s) | F171116A_09 & F171116B_16 | Injected By | SMT |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 48 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 42 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 43 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 51 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 50 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 68 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 63 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 39 R |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 76 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 66 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 51 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 58 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 34 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 40 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-58687 | | |
| Filename | F171116B_01 | Matrix | Solid |
| Total Amount Extracted | 20.7 g | Dilution | NA |
| ICAL ID | F171017 | Extracted | 11/10/2017 17:45 |
| CCal Filename(s) | F171116A_09 & F171116B_16 | Analyzed | 11/16/2017 15:37 |
| Method Blank ID | BLANK-58686 | Injected By | SMT |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.17 | 87 | 2,3,7,8-TCDF-13C | 2.0 | 62 |
| Total TCDF | | | | 2,3,7,8-TCDD-13C | 2.0 | 67 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.0 | 59 |
| 2,3,7,8-TCDD | 0.20 | 0.17 | 85 | 2,3,4,7,8-PeCDF-13C | 2.0 | 60 |
| Total TCDD | | | | 1,2,3,7,8-PeCDD-13C | 2.0 | 68 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.0 | 65 |
| 1,2,3,7,8-PeCDF | 1.0 | 0.91 | 91 | 1,2,3,6,7,8-HxCDF-13C | 2.0 | 65 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.83 | 83 | 2,3,4,6,7,8-HxCDF-13C | 2.0 | 71 |
| Total PeCDF | | | | 1,2,3,7,8,9-HxCDF-13C | 2.0 | 61 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.0 | 75 |
| 1,2,3,7,8-PeCDD | 1.0 | 0.85 | 85 | 1,2,3,6,7,8-HxCDD-13C | 2.0 | 61 |
| Total PeCDD | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 60 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 57 |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.88 | 88 | 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 59 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.86 | 86 | OCDD-13C | 4.0 | 41 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.80 | 80 | | | |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.86 | 86 | 1,2,3,4-TCDD-13C | 2.0 | NA |
| Total HxCDF | | | | 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 1,2,3,4,7,8-HxCDD | 1.0 | 0.85 | 85 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.97 | 97 | | | |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.91 | 91 | | | |
| Total HxCDD | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.90 | 90 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.85 | 85 | | | |
| Total HpCDF | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.86 | 86 | | | |
| Total HpCDD | | | | | | |
| OCDF | 2.0 | 1.8 | 88 | | | |
| OCDD | 2.0 | 1.7 | 86 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
**ESS Project No. 1711199**
Project Manager Marc Levesque
Date Received 11/8/2017 (by )

Client Company Charter
Client Email
Site Location
Date Assigned 11/8/2017

Collected By
Date Required 11/15/2017

| Sample Information | | | | Lab No. | Identification Tests | | | | | | | | Permeability | | Compaction | | | Soil Strength | | | Consol. | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring/ Test Pit No. | Sample or depth | Sample date | ESS Sample ID | | Water Cont. % | LL & PL % | Org. % | Bulk | Sieve -200 % | Hyd -2μ % | $G_s$ | Tube Den-sity | Sand | Clay | Mod. | Std. | CBR | Un-con-fined | UU | CIU | Stand ard | E.O.P. | |
| | | | | | D2216 | D4318 | D2974 | | D422 | | D854 | | D2434 | D5084 | D1557 | D698 | D1883 | D2166 | D2850 | D4767 | D2435 | D2435 | # |
| Type A Capping Sand | | 11/8/17 | 1711199-01 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C Capping Sand | | 11/8/17 | 1711199-02 | | X | | | | X | | | | | | | | | | | | | | ** |

Notes: ** = Material Classification D2487

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1711726**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 6:07 pm, Dec 12, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
Pace Analytical - Minneapolis, MN Dioxin, Dioxin

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

## SAMPLE RECEIPT

The following samples were received on November 28, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on November 28, 2017 at 20:48.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1711726-01 | Type A-Capping Sand-002 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-02 | Type A-Capping Sand-003 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-03 | Type A-Capping Sand-004 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-04 | Type A-Capping Sand-005 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-05 | Type A-Capping Sand-006 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-06 | Type A-Capping Sand-007 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-07 | Type A-Capping Sand-008 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-08 | Type A-Capping Sand-009 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-09 | Type C-Capping Sand-002 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-10 | Type C-Capping Sand-003 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711726-11 | Trip Blank | Solid | 8260B Low |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711726

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

C7K0460-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
sec-Butylbenzene (23% @ 20%)

CK72939-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
1,2,3-Trichloropropane (22% @ 20%), 1,4-Dioxane (23% @ 20%), 2-Butanone (24% @ 20%), 2-Hexanone (22% @ 20%), 4-Methyl-2-Pentanone (28% @ 20%), Acetone (26% @ 20%), Methyl tert-Butyl Ether (21% @ 20%), Tetrahydrofuran (25% @ 20%)

**8151A Chlorinated Herbicides**

1711726-09 **Modified result**
MCPP

1711726-09 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

1711726-10 **Modified result**
MCPP

1711726-10 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

C7L0001-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4,5-T (18% @ 15%), 2,4,5-TP (Silvex) (20% @ 15%)

C7L0001-CCV3 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

C7L0001-CCV4 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

CK72927-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
2,4-DB [2C] (34% @ 30%)

**8270D Semi-Volatile Organic Compounds**

C7K0432-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (81% @ 80-120%)

C7K0432-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2-Methylphenol (31% @ 20%), 4-Nitrophenol (29% @ 20%), Fluorene (25% @ 20%), N-Nitrosodimethylamine (27% @ 20%), Pentachlorophenol (26% @ 20%)

C7K0433-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (112% @ 80-120%), Pentachlorophenol (98% @ 80-120%)

C7K0433-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
4-Chloroaniline (21% @ 20%), bis(2-Chloroethyl)ether (22% @ 20%)

**Classical Chemistry**

1711726-05 **RSD of replicate analysis >25%, reanalysis produced similar results, sample is non-homogeneous.**
Total Organic Carbon (Average)

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711726

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711726-01 through 1711726-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (X) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | (X) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | ( ) MassDEP EPH CAM IV B | (X) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes (X) No ( )* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard
Date: December 12, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.51) | | 6020A | | 20 | NAR | 11/29/17 16:03 | 2.04 | 100 | CK72844 |
| **Arsenic** | **5.85** (2.54) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| **Barium** | **2.72** (2.54) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| **Beryllium** | **0.43** (0.11) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| Cadmium | ND (0.51) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| **Chromium** | **1.04** (1.01) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| Lead | ND (5.07) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| Mercury | ND (0.034) | | 7471B | | 1 | MJV | 11/29/17 14:00 | 0.6 | 40 | CK72845 |
| Nickel | ND (2.54) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| Selenium | ND (0.51) | | 6020A | | 20 | NAR | 11/29/17 16:03 | 2.04 | 100 | CK72844 |
| Silver | ND (0.51) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| Thallium | ND (0.51) | | 6020A | | 20 | NAR | 11/29/17 16:03 | 2.04 | 100 | CK72844 |
| Vanadium | ND (1.01) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |
| **Zinc** | **18.2** (2.54) | | 6010C | | 1 | KJK | 11/29/17 12:43 | 2.04 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Acetone | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Benzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Bromoform | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Chloroform | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Styrene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Toluene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Xylene O | ND (0.0053) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0106) | | 8260B Low | | 1 | 11/29/17 20:49 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *108 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *103 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0216) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 11/29/17 18:08 | C7K0434 | CK72816 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *64 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *32 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *34 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 11:40

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:49 | | CK72812 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *92 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| MCPA | ND (2.36) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |
| MCPP | ND (2.38) | | 8151A | | 1 | 12/01/17 16:20 | C7L0001 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *124 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *120 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,4-Dichlorophenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,4-Dimethylphenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,4-Dinitrophenol | ND (1.79) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2-Chloronaphthalene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2-Chlorophenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2-Methylnaphthalene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2-Methylphenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 2-Nitrophenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.714) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 3+4-Methylphenol | ND (0.714) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 4-Chloroaniline | ND (0.714) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| 4-Nitrophenol | ND (1.79) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Acenaphthene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Acenaphthylene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Acetophenone | ND (0.714) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Aniline | ND (1.79) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Anthracene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Azobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Benzo(a)anthracene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Benzo(a)pyrene | ND (0.179) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Benzo(b)fluoranthene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Benzo(k)fluoranthene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Butylbenzylphthalate | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Chrysene | ND (0.179) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.179) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Dibenzofuran | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Diethylphthalate | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Dimethylphthalate | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Di-n-butylphthalate | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Di-n-octylphthalate | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Fluoranthene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Fluorene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Hexachlorobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Hexachlorobutadiene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Hexachloroethane | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Isophorone | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Naphthalene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Nitrobenzene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| N-Nitrosodimethylamine | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Pentachlorophenol | ND (1.79) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Phenanthrene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Phenol | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |
| Pyrene | ND (0.356) | | 8270D | | 1 | 11/30/17 1:07 | C7K0433 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *76 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *94 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *80 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *89 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *81 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *90 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-002
Date Sampled: 11/28/17 14:20
Percent Solids: 97

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (200) | | 9060 | | 1 | EEB | 12/01/17 20:54 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:32 | 2.27 | 100 | CK72844 |
| **Arsenic** | **5.07** (2.29) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| **Barium** | **2.66** (2.29) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| **Beryllium** | **0.43** (0.10) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| **Chromium** | **1.19** (0.92) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| Lead | ND (4.59) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 11/29/17 14:10 | 0.67 | 40 | CK72845 |
| Nickel | ND (2.29) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:32 | 2.27 | 100 | CK72844 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:32 | 2.27 | 100 | CK72844 |
| **Vanadium** | **0.93** (0.92) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |
| **Zinc** | **17.1** (2.29) | | 6010C | | 1 | KJK | 11/29/17 13:03 | 2.27 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.0854) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Acetone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 21:14 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *108 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *104 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0208) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 18:36 | C7K0434 | CK72816 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *73 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *41 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *44 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:36 | | CK72911 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *102 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| MCPA | ND (2.35) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |
| MCPP | ND (2.38) | | 8151A | | 1 | 12/01/17 16:55 | C7L0001 | CK72927 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *120 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *117 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,4-Dichlorophenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,4-Dimethylphenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,4-Dinitrophenol | ND (1.77) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2-Chloronaphthalene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2-Chlorophenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2-Methylnaphthalene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2-Methylphenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 2-Nitrophenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.709) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 3+4-Methylphenol | ND (0.709) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 4-Chloroaniline | ND (0.709) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| 4-Nitrophenol | ND (1.77) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Acenaphthene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Acenaphthylene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Acetophenone | ND (0.709) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Aniline | ND (1.77) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Anthracene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Azobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Benzo(a)anthracene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Benzo(a)pyrene | ND (0.177) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Benzo(b)fluoranthene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Benzo(k)fluoranthene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Butylbenzylphthalate | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Chrysene | ND (0.177) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.177) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Dibenzofuran | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Diethylphthalate | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Dimethylphthalate | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Di-n-butylphthalate | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Di-n-octylphthalate | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Fluoranthene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Fluorene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Hexachlorobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Hexachlorobutadiene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Hexachloroethane | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Isophorone | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Naphthalene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Nitrobenzene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| N-Nitrosodimethylamine | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Pentachlorophenol | ND (1.77) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Phenanthrene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Phenol | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |
| Pyrene | ND (0.354) | | 8270D | | 1 | 11/30/17 1:41 | C7K0433 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *102 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *88 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *88 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *91 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *91 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *102 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-003
Date Sampled: 11/28/17 14:23
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (240) | | 9060 | | 1 | DEL | 12/01/17 21:44 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.42) | | 6020A | | 20 | NAR | 11/29/17 16:38 | 2.5 | 100 | CK72844 |
| **Arsenic** | **4.08** (2.09) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| **Barium** | **2.67** (2.09) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| **Beryllium** | **0.50** (0.09) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| Cadmium | ND (0.42) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| **Chromium** | **1.23** (0.84) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| Lead | ND (4.18) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 11/29/17 14:12 | 0.66 | 40 | CK72845 |
| Nickel | ND (2.09) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| Selenium | ND (0.42) | | 6020A | | 20 | NAR | 11/29/17 16:38 | 2.5 | 100 | CK72844 |
| Silver | ND (0.42) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| Thallium | ND (0.42) | | 6020A | | 20 | NAR | 11/29/17 16:38 | 2.5 | 100 | CK72844 |
| Vanadium | ND (0.84) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |
| **Zinc** | **15.1** (2.09) | | 6010C | | 1 | KJK | 11/29/17 13:07 | 2.5 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Acetone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 21:39 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *103 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0213) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 11/29/17 19:05 | C7K0434 | CK72816 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *72 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *84 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *38 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *41 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 11:54 | | CK72911 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *87 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *96 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *101 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 10.5
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.009) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.009) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.047) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| Dalapon | ND (0.045) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| Dinoseb | ND (0.047) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| MCPA | ND (2.31) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |
| MCPP | ND (2.34) | | 8151A | | 1 | 12/01/17 17:31 | C7L0001 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *121 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *113 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,4-Dichlorophenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,4-Dimethylphenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,4-Dinitrophenol | ND (1.77) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2-Chloronaphthalene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2-Chlorophenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2-Methylnaphthalene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2-Methylphenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 2-Nitrophenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.706) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 3+4-Methylphenol | ND (0.706) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 4-Chloroaniline | ND (0.706) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| 4-Nitrophenol | ND (1.77) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Acenaphthene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Acenaphthylene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Acetophenone | ND (0.706) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Aniline | ND (1.77) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Anthracene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Azobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Benzo(a)anthracene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Benzo(a)pyrene | ND (0.177) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Benzo(b)fluoranthene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Benzo(k)fluoranthene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Butylbenzylphthalate | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Chrysene | ND (0.177) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.177) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Dibenzofuran | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Diethylphthalate | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Dimethylphthalate | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Di-n-butylphthalate | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Di-n-octylphthalate | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Fluoranthene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Fluorene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Hexachlorobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Hexachlorobutadiene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Hexachloroethane | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Isophorone | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Naphthalene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Nitrobenzene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| N-Nitrosodimethylamine | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Pentachlorophenol | ND (1.77) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Phenanthrene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Phenol | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |
| Pyrene | ND (0.352) | | 8270D | | 1 | 11/30/17 2:16 | C7K0433 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *79 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *104 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *85 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *84 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *89 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *86 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *106 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-004
Date Sampled: 11/28/17 14:26
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (200) | | 9060 | | 1 | EEB | 12/01/17 22:00 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:44 | 2.26 | 100 | CK72844 |
| **Arsenic** | **2.87** (2.30) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| **Barium** | **3.36** (2.30) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| **Beryllium** | **0.41** (0.10) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| **Chromium** | **1.01** (0.92) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| **Lead** | **7.05** (4.60) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 11/29/17 14:14 | 0.66 | 40 | CK72845 |
| Nickel | ND (2.30) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:44 | 2.26 | 100 | CK72844 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:44 | 2.26 | 100 | CK72844 |
| Vanadium | ND (0.92) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |
| **Zinc** | **15.5** (2.30) | | 6010C | | 1 | KJK | 11/29/17 13:23 | 2.26 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.0838) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Acetone | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0084) | | 8260B Low | | 1 | 11/29/17 22:05 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *104 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *101 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 19.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0209) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 19:33 | C7K0434 | CK72816 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *78 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *89 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *37 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *39 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:13 | | CK72911 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *102 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *94 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *96 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *99 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 10.5
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.009) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.009) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| 2,4-D | ND (0.046) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.047) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| Dalapon | ND (0.045) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.046) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| Dinoseb | ND (0.047) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| MCPA | ND (2.30) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |
| MCPP | ND (2.32) | | 8151A | | 1 | 12/01/17 18:05 | C7L0001 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *118 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *112 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (1.71) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.684) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.684) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.684) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (1.71) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Acetophenone | ND (0.684) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Aniline | ND (1.71) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Anthracene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Azobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.171) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Chrysene | ND (0.171) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.171) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Fluorene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Isophorone | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Naphthalene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (1.71) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Phenol | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |
| Pyrene | ND (0.341) | | 8270D | | 1 | 11/29/17 19:45 | C7K0432 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *79 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *90 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *89 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96
Initial Volume: 15.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *83 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *82 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *91 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *85 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-005
Date Sampled: 11/28/17 14:30
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **319** (200) | | 9060 | | 1 | EEB | 12/01/17 22:50 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.43) | | 6020A | | 20 | NAR | 11/29/17 16:50 | 2.43 | 100 | CK72844 |
| **Arsenic** | **3.87** (2.14) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| **Barium** | **2.52** (2.14) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| **Beryllium** | **0.41** (0.09) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| Cadmium | ND (0.43) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| **Chromium** | **1.16** (0.85) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| Lead | ND (4.27) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| Mercury | ND (0.027) | | 7471B | | 1 | MJV | 11/29/17 14:16 | 0.76 | 40 | CK72845 |
| Nickel | ND (2.14) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| Selenium | ND (0.43) | | 6020A | | 20 | NAR | 11/29/17 16:50 | 2.43 | 100 | CK72844 |
| Silver | ND (0.43) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| Thallium | ND (0.43) | | 6020A | | 20 | NAR | 11/29/17 16:50 | 2.43 | 100 | CK72844 |
| Vanadium | ND (0.85) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |
| **Zinc** | **14.9** (2.14) | | 6010C | | 1 | KJK | 11/29/17 13:27 | 2.43 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.0911) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Acetone | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Benzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Bromoform | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Chloroform | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Styrene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Toluene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Xylene O | ND (0.0046) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0091) | | 8260B Low | | 1 | 11/29/17 22:30 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *106 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0211) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 20:02 | C7K0434 | CK72816 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *62 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *31 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *32 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:32 | | CK72911 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *106 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *104 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *107 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| MCPA | ND (2.39) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |
| MCPP | ND (2.42) | | 8151A | | 1 | 12/01/17 18:40 | C7L0001 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *120 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *110 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (1.76) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.702) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.702) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.702) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (1.76) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Acetophenone | ND (0.702) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Aniline | ND (1.76) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Anthracene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Azobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.176) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Chrysene | ND (0.176) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.176) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Fluorene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Isophorone | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Naphthalene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (1.76) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Phenol | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |
| Pyrene | ND (0.350) | | 8270D | | 1 | 11/29/17 20:19 | C7K0432 | CK72909 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *71 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *82 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *83 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *78 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *77 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *84 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *79 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-006
Date Sampled: 11/28/17 14:34
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **X* 1090** (200) | | 9060 | | 1 | EEB | 12/01/17 23:07 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:55 | 2.24 | 100 | CK72844 |
| **Arsenic** | **3.61** (2.32) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| **Barium** | **2.43** (2.32) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| **Beryllium** | **0.40** (0.10) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| **Chromium** | **1.74** (0.93) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| Lead | ND (4.63) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| Mercury | ND (0.034) | | 7471B | | 1 | MJV | 11/29/17 14:22 | 0.6 | 40 | CK72845 |
| Nickel | ND (2.32) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:55 | 2.24 | 100 | CK72844 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 11/29/17 16:55 | 2.24 | 100 | CK72844 |
| Vanadium | ND (0.93) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |
| **Zinc** | **12.4** (2.32) | | 6010C | | 1 | KJK | 11/29/17 13:31 | 2.24 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.0851) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Acetone | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0085) | | 8260B Low | | 1 | 11/29/17 22:55 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *105 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *103 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0215) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 11/29/17 20:30 | C7K0434 | CK72816 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *66 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *35 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *38 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 12:52 | | CK72911 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *99 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *93 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.009) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.009) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.047) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| Dalapon | ND (0.045) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| Dinoseb | ND (0.047) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| MCPA | ND (2.32) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |
| MCPP | ND (2.35) | | 8151A | | 1 | 12/01/17 19:14 | C7L0001 | CK72927 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *126 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *119 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (1.77) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.706) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.706) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.706) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (1.77) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Acetophenone | ND (0.706) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Aniline | ND (1.77) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Anthracene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Azobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.177) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Chrysene | ND (0.177) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.177) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Fluorene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Isophorone | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Naphthalene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (1.77) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Phenol | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |
| Pyrene | ND (0.353) | | 8270D | | 1 | 11/29/17 20:53 | C7K0432 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *83 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *77 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *86 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *95 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96
Initial Volume: 14.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *83 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *84 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *87 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *86 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-007
Date Sampled: 11/28/17 14:38
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (200) | | 9060 | | 1 | EEB | 12/01/17 23:23 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 11/29/17 17:13 | 2.22 | 100 | CK72844 |
| **Arsenic** | **5.30** (2.34) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| **Barium** | **3.06** (2.34) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| **Beryllium** | **0.43** (0.10) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| **Chromium** | **1.11** (0.94) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| **Lead** | **9.00** (4.68) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| Mercury | ND (0.028) | | 7471B | | 1 | MJV | 11/29/17 14:24 | 0.74 | 40 | CK72845 |
| Nickel | ND (2.34) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 11/29/17 17:13 | 2.22 | 100 | CK72844 |
| Silver | ND (0.47) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| Thallium | ND (0.47) | | 6020A | | 20 | NAR | 11/29/17 17:13 | 2.22 | 100 | CK72844 |
| **Vanadium** | **1.72** (0.94) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |
| **Zinc** | **16.5** (2.34) | | 6010C | | 1 | KJK | 11/29/17 13:36 | 2.22 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.0999) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Acetone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 23:20 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *105 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 20.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Aldrin | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0201) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Endrin | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0025) | | 8081B | | 1 | 11/29/17 20:59 | C7K0434 | CK72816 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *68 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *38 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *41 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:11 | | CK72911 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *104 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *103 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| MCPA | ND (2.35) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |
| MCPP | ND (2.37) | | 8151A | | 1 | 12/01/17 19:49 | C7L0001 | CK72927 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *131 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *125 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (1.65) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.658) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.658) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.658) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (1.65) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Acetophenone | ND (0.658) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Aniline | ND (1.65) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Anthracene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Azobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.165) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Chrysene | ND (0.165) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.165) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Fluorene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Isophorone | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Naphthalene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (1.65) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Phenol | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |
| Pyrene | ND (0.329) | | 8270D | | 1 | 11/29/17 21:27 | C7K0432 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *76 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *86 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *93 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *81 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *79 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *86 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *90 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-008
Date Sampled: 11/28/17 14:42
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (171) | | 9060 | | 1 | DEL | 12/07/17 3:31 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.52) | | 6020A | | 20 | NAR | 11/29/17 17:19 | 2 | 100 | CK72844 |
| **Arsenic** | **3.79** (2.61) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| **Barium** | **3.05** (2.61) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| **Beryllium** | **0.39** (0.11) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| Cadmium | ND (0.52) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| **Chromium** | **1.49** (1.04) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| Lead | ND (5.22) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 11/29/17 14:26 | 0.66 | 40 | CK72845 |
| Nickel | ND (2.61) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| Selenium | ND (0.52) | | 6020A | | 20 | NAR | 11/29/17 17:19 | 2 | 100 | CK72844 |
| Silver | ND (0.52) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| Thallium | ND (0.52) | | 6020A | | 20 | NAR | 11/29/17 17:19 | 2 | 100 | CK72844 |
| Vanadium | ND (1.04) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |
| **Zinc** | **15.7** (2.61) | | 6010C | | 1 | KJK | 11/29/17 13:39 | 2 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.0869) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Acetone | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0087) | | 8260B Low | | 1 | 11/29/17 23:45 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *108 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *105 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *103 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Chlordane (Total) | ND (0.0212) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 11/29/17 21:27 | C7K0434 | CK72816 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *73 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *33 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *37 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 11/30/17 13:30 | | CK72911 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *104 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *102 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| MCPA | ND (2.40) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |
| MCPP | ND (2.43) | | 8151A | | 1 | 12/01/17 20:23 | C7L0001 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *134 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *128 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (1.81) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.725) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.725) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.725) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (1.81) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Acetophenone | ND (0.725) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Aniline | ND (1.81) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Anthracene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Azobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.181) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Chrysene | ND (0.181) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.181) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Fluorene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Isophorone | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Naphthalene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (1.81) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Phenol | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |
| Pyrene | ND (0.362) | | 8270D | | 1 | 11/29/17 22:01 | C7K0432 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *73 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *68 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *78 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *82 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *73 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *72 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *78 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *77 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A-Capping Sand-009
Date Sampled: 11/28/17 14:46
Percent Solids: 96

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (179) | | 9060 | | 1 | DEL | 12/07/17 3:47 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.59) | | 6020A | | 20 | NAR | 11/29/17 17:25 | 2.03 | 100 | CK72844 |
| **Arsenic** | **19.6** (2.93) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| **Barium** | **14.8** (2.93) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| **Beryllium** | **0.39** (0.13) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| Cadmium | ND (0.59) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| **Chromium** | **43.5** (1.17) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| **Lead** | **36.3** (5.87) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| Mercury | ND (0.030) | | 7471B | | 1 | MJV | 11/29/17 14:28 | 0.78 | 40 | CK72845 |
| **Nickel** | **16.0** (2.93) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| Selenium | ND (0.59) | | 6020A | | 20 | NAR | 11/29/17 17:25 | 2.03 | 100 | CK72844 |
| Silver | ND (0.59) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| Thallium | ND (0.59) | | 6020A | | 20 | NAR | 11/29/17 17:25 | 2.03 | 100 | CK72844 |
| **Vanadium** | **11.4** (1.17) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |
| **Zinc** | **23.8** (2.93) | | 6010C | | 1 | KJK | 11/29/17 13:43 | 2.03 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,1,1-Trichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,1,2-Trichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,1-Dichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,1-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,1-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2,3-Trichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2,3-Trichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2,4-Trichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2,4-Trimethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2-Dibromoethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2-Dichloroethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,2-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,3,5-Trimethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,3-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,3-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,4-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 1,4-Dioxane | ND (0.0916) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 2,2-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 2-Butanone | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 2-Chlorotoluene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 2-Hexanone | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 4-Chlorotoluene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 4-Isopropyltoluene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| 4-Methyl-2-Pentanone | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Acetone | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Benzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Bromobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Bromochloromethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Bromoform | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Bromomethane | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Carbon Disulfide | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Carbon Tetrachloride | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Chlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Chloroethane | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Chloroform | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Chloromethane | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| cis-1,2-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| cis-1,3-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Dibromomethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Dichlorodifluoromethane | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Diethyl Ether | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Di-isopropyl ether | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Ethyl tertiary-butyl ether | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Ethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Hexachlorobutadiene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Isopropylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Methyl tert-Butyl Ether | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Methylene Chloride | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Naphthalene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| n-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| n-Propylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| sec-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Styrene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| tert-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Tertiary-amyl methyl ether | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Tetrachloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Tetrahydrofuran | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Toluene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| trans-1,3-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Trichloroethene | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Trichlorofluoromethane | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Vinyl Chloride | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Xylene O | ND (0.0046) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Xylene P,M | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | C7K0460 | CK73025 |
| Xylenes (Total) | ND (0.0092) | | 8260B Low | | 1 | 11/30/17 18:59 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *92 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *94 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/1/17 11:55

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| 4,4´-DDE | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| 4,4´-DDT | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Aldrin | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| alpha-BHC | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| alpha-Chlordane | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| beta-BHC | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Chlordane (Total) | ND (0.0249) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| delta-BHC | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Dieldrin | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Endosulfan I | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Endosulfan II | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Endosulfan Sulfate | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Endrin | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Endrin Ketone | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| gamma-BHC (Lindane) | ND (0.0019) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| gamma-Chlordane | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Heptachlor | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Heptachlor Epoxide | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Hexachlorobenzene | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |
| Methoxychlor | ND (0.0031) | | 8081B | | 1 | 12/01/17 18:17 | C7L0010 | CK73013 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *91 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *91 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 11/30/17 13:50 | | CK72911 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *107 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *106 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *97 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *85 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 10
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| 2,4-D | ND (0.056) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| 2,4-DB | ND (0.057) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| Dalapon | ND (0.054) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| Dichlorprop | ND (0.056) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| Dinoseb | ND (0.057) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| MCPA | ND (2.77) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |
| MCPP | # ND (2.80) | | 8151A | | 1 | 12/01/17 20:57 | C7L0001 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *108 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *110 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (2.06) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.822) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.822) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.822) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (2.06) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Acetophenone | ND (0.822) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Aniline | ND (2.06) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Anthracene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Azobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.206) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Chrysene | ND (0.206) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.206) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Fluorene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Isophorone | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Naphthalene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (2.06) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Phenol | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |
| Pyrene | ND (0.410) | | 8270D | | 1 | 11/29/17 22:35 | C7K0432 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *75 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *83 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *86 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *78 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *76 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *84 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *91 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-002
Date Sampled: 11/28/17 14:50
Percent Solids: 84

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **1450** (162) | | 9060 | | 1 | DEL | 12/02/17 0:46 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.53) | | 6020A | | 20 | NAR | 11/29/17 17:31 | 2.26 | 100 | CK72844 |
| **Arsenic** | **21.5** (2.67) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| **Barium** | **13.4** (2.67) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| **Beryllium** | **0.38** (0.12) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| Cadmium | ND (0.53) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| **Chromium** | **35.2** (1.07) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| **Lead** | **36.0** (5.34) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 11/29/17 14:30 | 0.76 | 40 | CK72845 |
| **Nickel** | **14.4** (2.67) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| Selenium | ND (0.53) | | 6020A | | 20 | NAR | 11/29/17 17:31 | 2.26 | 100 | CK72844 |
| Silver | ND (0.53) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| Thallium | ND (0.53) | | 6020A | | 20 | NAR | 11/29/17 17:31 | 2.26 | 100 | CK72844 |
| **Vanadium** | **10.7** (1.07) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |
| **Zinc** | **24.2** (2.67) | | 6010C | | 1 | KJK | 11/29/17 13:47 | 2.26 | 100 | CK72844 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 1,4-Dioxane | ND (0.0838) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 2-Butanone | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 2-Hexanone | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| 4-Methyl-2-Pentanone | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Acetone | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Bromomethane | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Chloroethane | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Chloromethane | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Dichlorodifluoromethane | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Methylene Chloride | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Vinyl Chloride | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Xylene P,M | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | C7K0460 | CK73025 |
| Xylenes (Total) | ND (0.0084) | | 8260B Low | | 1 | 11/30/17 19:24 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *96 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *96 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *101 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 20.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 11/30/17 15:05

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Chlordane (Total) | ND (0.0236) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| gamma-BHC (Lindane) | ND (0.0018) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/01/17 18:45 | C7L0010 | CK73013 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *63 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *68 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *51 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *56 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/29/17 17:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 11/30/17 14:09 | | CK72911 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *101 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *101 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *93 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *85 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 11/29/17 13:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| 2,4-D | ND (0.056) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| 2,4-DB | ND (0.056) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| Dalapon | ND (0.054) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| Dichlorprop | ND (0.056) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| Dinoseb | ND (0.056) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| MCPA | ND (2.75) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |
| MCPP | # ND (2.78) | | 8151A | | 1 | 12/05/17 4:50 | C7L0036 | CK72927 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *105 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *120 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 1,2-Dichlorobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 1,3-Dichlorobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 1,4-Dichlorobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,4,5-Trichlorophenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,4,6-Trichlorophenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,4-Dichlorophenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,4-Dimethylphenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,4-Dinitrophenol | ND (2.02) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,4-Dinitrotoluene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2,6-Dinitrotoluene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2-Chloronaphthalene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2-Chlorophenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2-Methylnaphthalene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2-Methylphenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 2-Nitrophenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 3,3′-Dichlorobenzidine | ND (0.805) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 3+4-Methylphenol | ND (0.805) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 4-Bromophenyl-phenylether | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 4-Chloroaniline | ND (0.805) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| 4-Nitrophenol | ND (2.02) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Acenaphthene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Acenaphthylene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Acetophenone | ND (0.805) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Aniline | ND (2.02) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Anthracene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Azobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Benzo(a)anthracene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Benzo(a)pyrene | ND (0.202) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Benzo(b)fluoranthene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Benzo(g,h,i)perylene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Benzo(k)fluoranthene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| bis(2-Chloroethyl)ether | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| bis(2-chloroisopropyl)Ether | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| bis(2-Ethylhexyl)phthalate | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Butylbenzylphthalate | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Chrysene | ND (0.202) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Dibenzo(a,h)Anthracene | ND (0.202) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Dibenzofuran | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Diethylphthalate | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Dimethylphthalate | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Di-n-butylphthalate | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Di-n-octylphthalate | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Fluoranthene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Fluorene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Hexachlorobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Hexachlorobutadiene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Hexachloroethane | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Indeno(1,2,3-cd)Pyrene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Isophorone | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Naphthalene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Nitrobenzene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| N-Nitrosodimethylamine | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Pentachlorophenol | ND (2.02) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Phenanthrene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Phenol | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |
| Pyrene | ND (0.402) | | 8270D | | 1 | 11/29/17 23:09 | C7K0432 | CK72909 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *75 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *76 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *78 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/29/17 11:40

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *76 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *74 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *82 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *94 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C-Capping Sand-003
Date Sampled: 11/28/17 14:55
Percent Solids: 83

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **1170** (133) | | 9060 | | 1 | DEL | 12/02/17 1:03 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/28/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 1,4-Dioxane | ND (0.100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 2-Butanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 2-Hexanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| 4-Methyl-2-Pentanone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Acetone | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/28/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Bromomethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Chloroethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Chloromethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Dichlorodifluoromethane | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Methylene Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 11/28/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711726
ESS Laboratory Sample ID: 1711726-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Vinyl Chloride | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Xylene P,M | ND (0.0100) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |
| Xylenes (Total) | ND (0.0075) | | 8260B Low | | 1 | 11/29/17 16:12 | C7K0446 | CK72939 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *100 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *94 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *100 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *106 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CK72844 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Antimony | ND | 0.50 | mg/kg wet | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Selenium | ND | 0.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Thallium | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 47.4 | 4.24 | mg/kg wet | 48.00 | | 99 | 80-120 | | | |
| Arsenic | 120 | 8.47 | mg/kg wet | 123.0 | | 98 | 80-120 | | | |
| Barium | 237 | 8.47 | mg/kg wet | 253.0 | | 94 | 80-120 | | | |
| Beryllium | 177 | 0.37 | mg/kg wet | 192.0 | | 92 | 80-120 | | | |
| Cadmium | 193 | 1.69 | mg/kg wet | 224.0 | | 86 | 80-120 | | | |
| Chromium | 171 | 3.39 | mg/kg wet | 179.0 | | 95 | 80-120 | | | |
| Lead | 141 | 16.9 | mg/kg wet | 145.0 | | 97 | 80-120 | | | |
| Nickel | 129 | 8.47 | mg/kg wet | 143.0 | | 90 | 80-120 | | | |
| Selenium | 43.0 | 4.24 | mg/kg wet | 42.40 | | 101 | 80-120 | | | |
| Silver | 81.0 | 1.69 | mg/kg wet | 81.60 | | 99 | 80-120 | | | |
| Thallium | 47.8 | 4.24 | mg/kg wet | 52.00 | | 92 | 80-120 | | | |
| Vanadium | 65.8 | 3.39 | mg/kg wet | 72.30 | | 91 | 80-120 | | | |
| Zinc | 708 | 8.47 | mg/kg wet | 770.0 | | 92 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 46.1 | 4.03 | mg/kg wet | 48.00 | | 96 | 80-120 | 3 | 30 | |
| Arsenic | 121 | 8.06 | mg/kg wet | 123.0 | | 98 | 80-120 | 0.5 | 20 | |
| Barium | 236 | 8.06 | mg/kg wet | 253.0 | | 93 | 80-120 | 0.6 | 20 | |
| Beryllium | 179 | 0.35 | mg/kg wet | 192.0 | | 93 | 80-120 | 1 | 20 | |
| Cadmium | 196 | 1.61 | mg/kg wet | 224.0 | | 87 | 80-120 | 2 | 20 | |
| Chromium | 173 | 3.23 | mg/kg wet | 179.0 | | 97 | 80-120 | 1 | 20 | |
| Lead | 140 | 16.1 | mg/kg wet | 145.0 | | 97 | 80-120 | 0.7 | 20 | |
| Nickel | 132 | 8.06 | mg/kg wet | 143.0 | | 92 | 80-120 | 2 | 20 | |
| Selenium | 42.4 | 4.03 | mg/kg wet | 42.40 | | 100 | 80-120 | 1 | 30 | |
| Silver | 82.2 | 1.61 | mg/kg wet | 81.60 | | 101 | 80-120 | 2 | 20 | |
| Thallium | 48.6 | 4.03 | mg/kg wet | 52.00 | | 93 | 80-120 | 2 | 30 | |
| Vanadium | 66.5 | 3.23 | mg/kg wet | 72.30 | | 92 | 80-120 | 1 | 20 | |
| Zinc | 721 | 8.06 | mg/kg wet | 770.0 | | 94 | 80-120 | 2 | 20 | |
| **Reference** | | | | | | | | | | |
| Barium | 430 | 9.62 | mg/kg wet | 500.0 | | 86 | 70-130 | | | |
| Cadmium | 390 | 1.92 | mg/kg wet | 500.0 | | 78 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CK72844 - 3050B** | | | | | | | | | | |
| Chromium | 456 | 3.85 | mg/kg wet | 500.0 | | 91 | 70-130 | | | |
| Lead | 436 | 19.2 | mg/kg wet | 500.0 | | 87 | 70-130 | | | |
| Silver | 256 | 1.92 | mg/kg wet | 500.0 | | 51 | 70-130 | | | |
| **Batch CK72845 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 20.7 | 1.87 | mg/kg wet | 17.80 | | 116 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 20.4 | 1.94 | mg/kg wet | 17.80 | | 114 | 80-120 | 2 | 20 | |
| **Reference** | | | | | | | | | | |
| Mercury | 1.06 | 0.187 | mg/kg wet | 1000 | | 0.1 | 0-200 | | | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CK72939 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK72939 - 5035** | | | | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0490* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK72939 - 5035** | | | | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0472* | | mg/kg wet | *0.05000* | | *94* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0489* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0518* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0588 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0532 | 0.0020 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0550 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0569 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0567 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0571 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0538 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,4-Dioxane | 1.07 | 0.100 | mg/kg wet | 1.000 | | 107 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0557 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| 2-Butanone | 0.281 | 0.0100 | mg/kg wet | 0.2500 | | 112 | 70-130 | | | |
| 2-Chlorotoluene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 2-Hexanone | 0.240 | 0.0100 | mg/kg wet | 0.2500 | | 96 | 70-130 | | | |
| 4-Chlorotoluene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.256 | 0.0100 | mg/kg wet | 0.2500 | | 103 | 70-130 | | | |
| Acetone | 0.288 | 0.0100 | mg/kg wet | 0.2500 | | 115 | 70-130 | | | |
| Benzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromobenzene | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromochloromethane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Bromodichloromethane | 0.0604 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | | | |
| Bromoform | 0.0575 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | | | |
| Bromomethane | 0.0483 | 0.0100 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Carbon Disulfide | 0.0560 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | | | |
| Carbon Tetrachloride | 0.0550 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Chlorobenzene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Chloroethane | 0.0517 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Chloroform | 0.0543 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK72939 - 5035** | | | | | | | | | | |
| Chloromethane | 0.0474 | 0.0100 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Dibromochloromethane | 0.0499 | 0.0020 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Dibromomethane | 0.0539 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0441 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Diethyl Ether | 0.0572 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| Di-isopropyl ether | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0546 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| Ethylbenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Hexachlorobutadiene | 0.0552 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Isopropylbenzene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | | | |
| Methylene Chloride | 0.0543 | 0.0100 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| Naphthalene | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| n-Butylbenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| n-Propylbenzene | 0.0534 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| sec-Butylbenzene | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| Styrene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| tert-Butylbenzene | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0551 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Tetrachloroethene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Tetrahydrofuran | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Toluene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Trichloroethene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Trichlorofluoromethane | 0.0552 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Vinyl Chloride | 0.0485 | 0.0100 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Xylene O | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Xylene P,M | 0.103 | 0.0100 | mg/kg wet | 0.1000 | | 103 | 70-130 | | | |
| Xylenes (Total) | 0.156 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0532* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0482* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0516* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0477* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 15 | 20 | |
| 1,1,1-Trichloroethane | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 15 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0437 | 0.0020 | mg/kg wet | 0.05000 | | 87 | 70-130 | 20 | 20 | |
| 1,1,2-Trichloroethane | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 20 | 20 | |
| 1,1-Dichloroethane | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 15 | 20 | |
| 1,1-Dichloroethene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 14 | 20 | |
| 1,1-Dichloropropene | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 16 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 14 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CK72939 - 5035** | | | | | | | | | | |
| 1,2,3-Trichloropropane | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 22 | 20 | D+ |
| 1,2,4-Trichlorobenzene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 15 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 14 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 12 | 20 | |
| 1,2-Dibromoethane | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 18 | 20 | |
| 1,2-Dichlorobenzene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 16 | 20 | |
| 1,2-Dichloroethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 20 | 20 | |
| 1,2-Dichloropropane | 0.0449 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 17 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 13 | 20 | |
| 1,3-Dichlorobenzene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 12 | 20 | |
| 1,3-Dichloropropane | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 16 | 20 | |
| 1,4-Dichlorobenzene | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 16 | 20 | |
| 1,4-Dioxane | 0.848 | 0.100 | mg/kg wet | 1.000 | | 85 | 70-130 | 23 | 20 | D+ |
| 2,2-Dichloropropane | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 16 | 20 | |
| 2-Butanone | 0.220 | 0.0100 | mg/kg wet | 0.2500 | | 88 | 70-130 | 24 | 20 | D+ |
| 2-Chlorotoluene | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 14 | 20 | |
| 2-Hexanone | 0.191 | 0.0100 | mg/kg wet | 0.2500 | | 77 | 70-130 | 22 | 20 | D+ |
| 4-Chlorotoluene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 12 | 20 | |
| 4-Isopropyltoluene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 12 | 20 | |
| 4-Methyl-2-Pentanone | 0.194 | 0.0100 | mg/kg wet | 0.2500 | | 78 | 70-130 | 28 | 20 | D+ |
| Acetone | 0.221 | 0.0100 | mg/kg wet | 0.2500 | | 88 | 70-130 | 26 | 20 | D+ |
| Benzene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 16 | 20 | |
| Bromobenzene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 14 | 20 | |
| Bromochloromethane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 18 | 20 | |
| Bromodichloromethane | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 19 | 20 | |
| Bromoform | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 20 | 20 | |
| Bromomethane | 0.0420 | 0.0100 | mg/kg wet | 0.05000 | | 84 | 70-130 | 14 | 20 | |
| Carbon Disulfide | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 15 | 20 | |
| Carbon Tetrachloride | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 15 | 20 | |
| Chlorobenzene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 15 | 20 | |
| Chloroethane | 0.0442 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | 15 | 20 | |
| Chloroform | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 16 | 20 | |
| Chloromethane | 0.0411 | 0.0100 | mg/kg wet | 0.05000 | | 82 | 70-130 | 14 | 20 | |
| cis-1,2-Dichloroethene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 16 | 20 | |
| cis-1,3-Dichloropropene | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 18 | 20 | |
| Dibromochloromethane | 0.0429 | 0.0020 | mg/kg wet | 0.05000 | | 86 | 70-130 | 15 | 20 | |
| Dibromomethane | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 20 | 20 | |
| Dichlorodifluoromethane | 0.0376 | 0.0100 | mg/kg wet | 0.05000 | | 75 | 70-130 | 16 | 20 | |
| Diethyl Ether | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 19 | 20 | |
| Di-isopropyl ether | 0.0435 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 18 | 20 | |
| Ethyl tertiary-butyl ether | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 19 | 20 | |
| Ethylbenzene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 13 | 20 | |
| Hexachlorobutadiene | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 12 | 20 | |
| Isopropylbenzene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 12 | 20 | |
| Methyl tert-Butyl Ether | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 21 | 20 | D+ |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK72939 - 5035** | | | | | | | | | | |
| Methylene Chloride | 0.0455 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | 18 | 20 | |
| Naphthalene | 0.0403 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | 19 | 20 | |
| n-Butylbenzene | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 13 | 20 | |
| n-Propylbenzene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 12 | 20 | |
| sec-Butylbenzene | 0.0371 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | 13 | 20 | |
| Styrene | 0.0412 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | 14 | 20 | |
| tert-Butylbenzene | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 13 | 20 | |
| Tertiary-amyl methyl ether | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 20 | 20 | |
| Tetrachloroethene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 11 | 20 | |
| Tetrahydrofuran | 0.0387 | 0.0050 | mg/kg wet | 0.05000 | | 77 | 70-130 | 25 | 20 | D+ |
| Toluene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 17 | 20 | |
| trans-1,2-Dichloroethene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 14 | 20 | |
| trans-1,3-Dichloropropene | 0.0433 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 19 | 20 | |
| Trichloroethene | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 14 | 20 | |
| Trichlorofluoromethane | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 15 | 20 | |
| Vinyl Chloride | 0.0423 | 0.0100 | mg/kg wet | 0.05000 | | 85 | 70-130 | 14 | 20 | |
| Xylene O | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 14 | 20 | |
| Xylene P,M | 0.0907 | 0.0100 | mg/kg wet | 0.1000 | | 91 | 70-130 | 13 | 20 | |
| Xylenes (Total) | 0.137 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0505* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0485* | | mg/kg wet | *0.05000* | | *97* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0506* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0486* | | mg/kg wet | *0.05000* | | *97* | *70-130* | | | |
| **Batch CK73025 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK73025 - 5035** | | | | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK73025 - 5035** | | | | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0515* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0467* | | mg/kg wet | *0.05000* | | *93* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0511* | | mg/kg wet | *0.05000* | | *102* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0513* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0451 | 0.0020 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0434 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,4-Dioxane | 0.825 | 0.100 | mg/kg wet | 1.000 | | 82 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 2-Butanone | 0.233 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | | | |
| 2-Chlorotoluene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 2-Hexanone | 0.191 | 0.0100 | mg/kg wet | 0.2500 | | 76 | 70-130 | | | |
| 4-Chlorotoluene | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.201 | 0.0100 | mg/kg wet | 0.2500 | | 81 | 70-130 | | | |
| Acetone | 0.229 | 0.0100 | mg/kg wet | 0.2500 | | 92 | 70-130 | | | |
| Benzene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Bromobenzene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Bromochloromethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Bromodichloromethane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK73025 - 5035** | | | | | | | | | | |
| Bromoform | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Bromomethane | 0.0441 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Carbon Disulfide | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Carbon Tetrachloride | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Chlorobenzene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Chloroethane | 0.0454 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Chloroform | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Chloromethane | 0.0432 | 0.0100 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Dibromochloromethane | 0.0445 | 0.0020 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Dibromomethane | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0395 | 0.0100 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Diethyl Ether | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Di-isopropyl ether | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Ethylbenzene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Hexachlorobutadiene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Isopropylbenzene | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Methylene Chloride | 0.0487 | 0.0100 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Naphthalene | 0.0401 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | | | |
| n-Butylbenzene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| n-Propylbenzene | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| sec-Butylbenzene | 0.0373 | 0.0050 | mg/kg wet | 0.05000 | | 75 | 70-130 | | | |
| Styrene | 0.0412 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | | | |
| tert-Butylbenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Tetrachloroethene | 0.0436 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Tetrahydrofuran | 0.0380 | 0.0050 | mg/kg wet | 0.05000 | | 76 | 70-130 | | | |
| Toluene | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Trichloroethene | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Trichlorofluoromethane | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Vinyl Chloride | 0.0439 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Xylene O | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Xylene P,M | 0.0902 | 0.0100 | mg/kg wet | 0.1000 | | 90 | 70-130 | | | |
| Xylenes (Total) | 0.137 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0519* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0482* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0518* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0474* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CK73025 - 5035** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0447 | 0.0020 | mg/kg wet | 0.05000 | | 89 | 70-130 | 1 | 20 | |
| 1,1,2-Trichloroethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 2 | 20 | |
| 1,1-Dichloroethane | 0.0447 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 3 | 20 | |
| 1,1-Dichloroethene | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| 1,1-Dichloropropene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 4 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 0.8 | 20 | |
| 1,2,3-Trichloropropane | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 0.1 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 0.3 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 1 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 4 | 20 | |
| 1,2-Dibromoethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 1 | 20 | |
| 1,2-Dichlorobenzene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 0.9 | 20 | |
| 1,2-Dichloroethane | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| 1,2-Dichloropropane | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 2 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 20 | |
| 1,3-Dichlorobenzene | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| 1,3-Dichloropropane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 0.04 | 20 | |
| 1,4-Dichlorobenzene | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 2 | 20 | |
| 1,4-Dioxane | 0.853 | 0.100 | mg/kg wet | 1.000 | | 85 | 70-130 | 3 | 20 | |
| 2,2-Dichloropropane | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| 2-Butanone | 0.231 | 0.0100 | mg/kg wet | 0.2500 | | 92 | 70-130 | 1 | 20 | |
| 2-Chlorotoluene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 1 | 20 | |
| 2-Hexanone | 0.195 | 0.0100 | mg/kg wet | 0.2500 | | 78 | 70-130 | 2 | 20 | |
| 4-Chlorotoluene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| 4-Isopropyltoluene | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 2 | 20 | |
| 4-Methyl-2-Pentanone | 0.204 | 0.0100 | mg/kg wet | 0.2500 | | 81 | 70-130 | 1 | 20 | |
| Acetone | 0.231 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | 1 | 20 | |
| Benzene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| Bromobenzene | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 0.9 | 20 | |
| Bromochloromethane | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 3 | 20 | |
| Bromodichloromethane | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| Bromoform | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 0.2 | 20 | |
| Bromomethane | 0.0412 | 0.0100 | mg/kg wet | 0.05000 | | 82 | 70-130 | 7 | 20 | |
| Carbon Disulfide | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 5 | 20 | |
| Carbon Tetrachloride | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 5 | 20 | |
| Chlorobenzene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 3 | 20 | |
| Chloroethane | 0.0435 | 0.0100 | mg/kg wet | 0.05000 | | 87 | 70-130 | 4 | 20 | |
| Chloroform | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 3 | 20 | |
| Chloromethane | 0.0413 | 0.0100 | mg/kg wet | 0.05000 | | 83 | 70-130 | 4 | 20 | |
| cis-1,2-Dichloroethene | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| cis-1,3-Dichloropropene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 0.4 | 20 | |
| Dibromochloromethane | 0.0442 | 0.0020 | mg/kg wet | 0.05000 | | 88 | 70-130 | 0.9 | 20 | |
| Dibromomethane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 1 | 20 | |
| Dichlorodifluoromethane | 0.0367 | 0.0100 | mg/kg wet | 0.05000 | | 73 | 70-130 | 7 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CK73025 - 5035** | | | | | | | | | | |
| Diethyl Ether | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 0.3 | 20 | |
| Di-isopropyl ether | 0.0449 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 0.5 | 20 | |
| Ethyl tertiary-butyl ether | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 0.3 | 20 | |
| Ethylbenzene | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 3 | 20 | |
| Hexachlorobutadiene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 2 | 20 | |
| Isopropylbenzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 2 | 20 | |
| Methyl tert-Butyl Ether | 0.0484 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 0.7 | 20 | |
| Methylene Chloride | 0.0474 | 0.0100 | mg/kg wet | 0.05000 | | 95 | 70-130 | 3 | 20 | |
| Naphthalene | 0.0412 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | 3 | 20 | |
| n-Butylbenzene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| n-Propylbenzene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 2 | 20 | |
| sec-Butylbenzene | 0.0368 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | 1 | 20 | |
| Styrene | 0.0409 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | 0.9 | 20 | |
| tert-Butylbenzene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 2 | 20 | |
| Tertiary-amyl methyl ether | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 0.3 | 20 | |
| Tetrachloroethene | 0.0423 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 3 | 20 | |
| Tetrahydrofuran | 0.0391 | 0.0050 | mg/kg wet | 0.05000 | | 78 | 70-130 | 3 | 20 | |
| Toluene | 0.0449 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 4 | 20 | |
| trans-1,2-Dichloroethene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| trans-1,3-Dichloropropene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 0.5 | 20 | |
| Trichloroethene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| Trichlorofluoromethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 5 | 20 | |
| Vinyl Chloride | 0.0416 | 0.0100 | mg/kg wet | 0.05000 | | 83 | 70-130 | 5 | 20 | |
| Xylene O | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| Xylene P,M | 0.0881 | 0.0100 | mg/kg wet | 0.1000 | | 88 | 70-130 | 2 | 20 | |
| Xylenes (Total) | 0.133 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0520* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0519* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0478* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK72816 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK72816 - 3546** | | | | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0114* | | mg/kg wet | *0.01250* | | *91* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0106* | | mg/kg wet | *0.01250* | | *85* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00899* | | mg/kg wet | *0.01250* | | *72* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.00923* | | mg/kg wet | *0.01250* | | *74* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| 4,4´-DDE | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| 4,4´-DDT | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| Aldrin | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Aldrin [2C] | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| alpha-BHC | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| alpha-BHC [2C] | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK72816 - 3546** | | | | | | | | | | |
| alpha-Chlordane | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| beta-BHC | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| beta-BHC [2C] | 0.0088 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| delta-BHC | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| delta-BHC [2C] | 0.0088 | 0.0025 | mg/kg wet | 0.01250 | | 70 | 40-140 | | | |
| Dieldrin | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Endosulfan I | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan I [2C] | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Endosulfan II | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Endosulfan II [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Endosulfan Sulfate | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| Endrin | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| Endrin [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Endrin Ketone | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0093 | 0.0015 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0093 | 0.0015 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| gamma-Chlordane | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| Heptachlor | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| Heptachlor [2C] | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| Heptachlor Epoxide | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Hexachlorobenzene | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Methoxychlor | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| Methoxychlor [2C] | 0.0087 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0122* | | mg/kg wet | *0.01250* | | *97* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0113* | | mg/kg wet | *0.01250* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00983* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.00956* | | mg/kg wet | *0.01250* | | *76* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 7 | 30 | |
| 4,4´-DDD [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 7 | 30 | |
| 4,4´-DDE | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 8 | 30 | |
| 4,4´-DDE [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| 4,4´-DDT | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 7 | 30 | |
| 4,4´-DDT [2C] | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 7 | 30 | |
| Aldrin | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 5 | 30 | |
| Aldrin [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 5 | 30 | |
| alpha-BHC | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 4 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK72816 - 3546** | | | | | | | | | | |
| alpha-BHC [2C] | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 5 | 30 | |
| alpha-Chlordane | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 6 | 30 | |
| alpha-Chlordane [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 6 | 30 | |
| beta-BHC | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 5 | 30 | |
| beta-BHC [2C] | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 6 | 30 | |
| delta-BHC | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 5 | 30 | |
| delta-BHC [2C] | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 6 | 30 | |
| Dieldrin | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 6 | 30 | |
| Dieldrin [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 5 | 30 | |
| Endosulfan I | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 5 | 30 | |
| Endosulfan I [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 5 | 30 | |
| Endosulfan II | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 7 | 30 | |
| Endosulfan II [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 6 | 30 | |
| Endosulfan Sulfate | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 7 | 30 | |
| Endosulfan Sulfate [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 7 | 30 | |
| Endrin | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| Endrin [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 6 | 30 | |
| Endrin Ketone | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 7 | 30 | |
| Endrin Ketone [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 7 | 30 | |
| gamma-BHC (Lindane) | 0.0098 | 0.0015 | mg/kg wet | 0.01250 | | 79 | 40-140 | 5 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0098 | 0.0015 | mg/kg wet | 0.01250 | | 79 | 40-140 | 5 | 30 | |
| gamma-Chlordane | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 6 | 30 | |
| gamma-Chlordane [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 5 | 30 | |
| Heptachlor | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 4 | 30 | |
| Heptachlor [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 4 | 30 | |
| Heptachlor Epoxide | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 6 | 30 | |
| Heptachlor Epoxide [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 5 | 30 | |
| Hexachlorobenzene | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 4 | 30 | |
| Hexachlorobenzene [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 3 | 30 | |
| Methoxychlor | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 6 | 30 | |
| Methoxychlor [2C] | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 8 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0127* | | mg/kg wet | *0.01250* | | *102* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0118* | | mg/kg wet | *0.01250* | | *94* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00992* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.00960* | | mg/kg wet | *0.01250* | | *77* | *30-150* | | | |
| **Batch CK73013 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK73013 - 3546** | | | | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Chlordane (Total) | ND | 0.0200 | mg/kg wet | | | | | | | |
| Chlordane (Total) [2C] | ND | 0.0200 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0118* | | mg/kg wet | *0.01250* | | *94* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0127* | | mg/kg wet | *0.01250* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00990* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0104* | | mg/kg wet | *0.01250* | | *83* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| 4,4´-DDE | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK73013 - 3546** | | | | | | | | | | |
| 4,4´-DDT | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Aldrin | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Aldrin [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| alpha-BHC | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| alpha-BHC [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| alpha-Chlordane | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| beta-BHC | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| beta-BHC [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| delta-BHC | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| delta-BHC [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| Dieldrin [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| Endosulfan I | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Endosulfan I [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Endosulfan II | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Endosulfan II [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| Endosulfan Sulfate | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endrin | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endrin [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| Endrin Ketone | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0107 | 0.0015 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0108 | 0.0015 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| gamma-Chlordane | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Heptachlor | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Heptachlor [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| Heptachlor Epoxide | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| Hexachlorobenzene | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | | | |
| Methoxychlor | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Methoxychlor [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0130* | | mg/kg wet | *0.01250* | | *104* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0130* | | mg/kg wet | *0.01250* | | *104* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0107* | | mg/kg wet | *0.01250* | | *85* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0105* | | mg/kg wet | *0.01250* | | *84* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | 9 | 30 | |
| 4,4´-DDD [2C] | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 6 | 30 | |
| 4,4´-DDE | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CK73013 - 3546** | | | | | | | | | | |
| 4,4´-DDE [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | 6 | 30 | |
| 4,4´-DDT | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 6 | 30 | |
| 4,4´-DDT [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 5 | 30 | |
| Aldrin | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 1 | 30 | |
| Aldrin [2C] | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 2 | 30 | |
| alpha-BHC | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 6 | 30 | |
| alpha-BHC [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 5 | 30 | |
| alpha-Chlordane | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 6 | 30 | |
| alpha-Chlordane [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 6 | 30 | |
| beta-BHC | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 9 | 30 | |
| beta-BHC [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 5 | 30 | |
| delta-BHC | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 8 | 30 | |
| delta-BHC [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 6 | 30 | |
| Dieldrin | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 7 | 30 | |
| Dieldrin [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | 5 | 30 | |
| Endosulfan I | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | 17 | 30 | |
| Endosulfan I [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 6 | 30 | |
| Endosulfan II | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 8 | 30 | |
| Endosulfan II [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 5 | 30 | |
| Endosulfan Sulfate | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 6 | 30 | |
| Endosulfan Sulfate [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 5 | 30 | |
| Endrin | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 5 | 30 | |
| Endrin [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| Endrin Ketone | 0.0121 | 0.0025 | mg/kg wet | 0.01250 | | 97 | 40-140 | 6 | 30 | |
| Endrin Ketone [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| gamma-BHC (Lindane) | 0.0113 | 0.0015 | mg/kg wet | 0.01250 | | 91 | 40-140 | 6 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0114 | 0.0015 | mg/kg wet | 0.01250 | | 91 | 40-140 | 5 | 30 | |
| gamma-Chlordane | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 5 | 30 | |
| gamma-Chlordane [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 6 | 30 | |
| Heptachlor | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 4 | 30 | |
| Heptachlor [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 0.7 | 30 | |
| Heptachlor Epoxide | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 5 | 30 | |
| Heptachlor Epoxide [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| Hexachlorobenzene | 0.0130 | 0.0025 | mg/kg wet | 0.01250 | | 104 | 40-140 | 5 | 30 | |
| Hexachlorobenzene [2C] | 0.0125 | 0.0025 | mg/kg wet | 0.01250 | | 100 | 40-140 | 4 | 30 | |
| Methoxychlor | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 4 | 30 | |
| Methoxychlor [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 2 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0136* | | mg/kg wet | *0.01250* | | *109* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0133* | | mg/kg wet | *0.01250* | | *106* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0108* | | mg/kg wet | *0.01250* | | *87* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0105* | | mg/kg wet | *0.01250* | | *84* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK72812 - 3540C** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CK72812 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0217* | | mg/kg wet | *0.02500* | | *87* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0224* | | mg/kg wet | *0.02500* | | *90* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0229* | | mg/kg wet | *0.02500* | | *92* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0236* | | mg/kg wet | *0.02500* | | *94* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 105 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 108 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 109 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 117 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0265* | | mg/kg wet | *0.02500* | | *106* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0265* | | mg/kg wet | *0.02500* | | *106* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0253* | | mg/kg wet | *0.02500* | | *101* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0250* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 111 | 40-140 | 6 | 30 | |
| Aroclor 1016 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 114 | 40-140 | 5 | 30 | |
| Aroclor 1260 | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 115 | 40-140 | 5 | 30 | |
| Aroclor 1260 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 124 | 40-140 | 5 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0277* | | mg/kg wet | *0.02500* | | *111* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0272* | | mg/kg wet | *0.02500* | | *109* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0269* | | mg/kg wet | *0.02500* | | *107* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0263* | | mg/kg wet | *0.02500* | | *105* | *30-150* | | | |
| **Batch CK72911 - 3540C** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CK72911 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0247* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0251* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0232* | | mg/kg wet | *0.02500* | | *93* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0239* | | mg/kg wet | *0.02500* | | *95* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 105 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 110 | 40-140 | | | |
| Aroclor 1260 | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 111 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 119 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0258* | | mg/kg wet | *0.02500* | | *103* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0261* | | mg/kg wet | *0.02500* | | *104* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0244* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0241* | | mg/kg wet | *0.02500* | | *96* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 113 | 40-140 | 7 | 30 | |
| Aroclor 1016 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 124 | 40-140 | 12 | 30 | |
| Aroclor 1260 | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 118 | 40-140 | 7 | 30 | |
| Aroclor 1260 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 129 | 40-140 | 8 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0268* | | mg/kg wet | *0.02500* | | *107* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0271* | | mg/kg wet | *0.02500* | | *109* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0261* | | mg/kg wet | *0.02500* | | *104* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0259* | | mg/kg wet | *0.02500* | | *104* | *30-150* | | | |
| **8151A Chlorinated Herbicides** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8151A Chlorinated Herbicides | | | | | | | | | | |
| **Batch CK72927 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.264* | | mg/kg wet | *0.2000* | | *132* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.246* | | mg/kg wet | *0.2000* | | *123* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.019 | 0.010 | mg/kg wet | 0.01900 | | 102 | 40-140 | | | |
| 2,4,5-T [2C] | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 80 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.019 | 0.010 | mg/kg wet | 0.01900 | | 98 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 80 | 40-140 | | | |
| 2,4-D | 0.173 | 0.047 | mg/kg wet | 0.1880 | | 92 | 40-140 | | | |
| 2,4-D [2C] | 0.176 | 0.047 | mg/kg wet | 0.1880 | | 93 | 40-140 | | | |
| 2,4-DB | 0.182 | 0.048 | mg/kg wet | 0.1900 | | 96 | 40-140 | | | |
| 2,4-DB [2C] | 0.163 | 0.048 | mg/kg wet | 0.1900 | | 86 | 40-140 | | | |
| Dalapon | 0.362 | 0.046 | mg/kg wet | 0.4550 | | 80 | 40-140 | | | |
| Dalapon [2C] | 0.339 | 0.046 | mg/kg wet | 0.4550 | | 74 | 40-140 | | | |
| Dicamba | 0.018 | 0.009 | mg/kg wet | 0.01880 | | 94 | 40-140 | | | |
| Dicamba [2C] | 0.015 | 0.009 | mg/kg wet | 0.01880 | | 80 | 40-140 | | | |
| Dichlorprop | 0.186 | 0.047 | mg/kg wet | 0.1880 | | 99 | 40-140 | | | |
| Dichlorprop [2C] | 0.155 | 0.047 | mg/kg wet | 0.1880 | | 82 | 40-140 | | | |
| Dinoseb | 0.018 | 0.048 | mg/kg wet | 0.09500 | | 19 | 10-100 | | | |
| Dinoseb [2C] | 0.014 | 0.048 | mg/kg wet | 0.09500 | | 15 | 10-100 | | | |
| MCPA | 17.9 | 2.32 | mg/kg wet | 18.60 | | 96 | 40-140 | | | |
| MCPA [2C] | 14.4 | 2.32 | mg/kg wet | 18.60 | | 77 | 40-140 | | | |
| MCPP | 16.7 | 2.35 | mg/kg wet | 18.80 | | 89 | 40-140 | | | |
| MCPP [2C] | 15.3 | 2.35 | mg/kg wet | 18.80 | | 81 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CK72927 - 3546** | | | | | | | | | | |
| *Surrogate: DCAA* | *0.236* | | mg/kg wet | *0.2000* | | *118* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.221* | | mg/kg wet | *0.2000* | | *110* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.021 | 0.010 | mg/kg wet | 0.01900 | | 112 | 40-140 | 9 | 30 | |
| 2,4,5-T [2C] | 0.018 | 0.010 | mg/kg wet | 0.01900 | | 94 | 40-140 | 16 | 30 | |
| 2,4,5-TP (Silvex) | 0.023 | 0.010 | mg/kg wet | 0.01900 | | 122 | 40-140 | 22 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 84 | 40-140 | 5 | 30 | |
| 2,4-D | 0.234 | 0.047 | mg/kg wet | 0.1880 | | 124 | 40-140 | 30 | 30 | |
| 2,4-D [2C] | 0.196 | 0.047 | mg/kg wet | 0.1880 | | 104 | 40-140 | 11 | 30 | |
| 2,4-DB | 0.151 | 0.048 | mg/kg wet | 0.1900 | | 80 | 40-140 | 18 | 30 | |
| 2,4-DB [2C] | 0.116 | 0.048 | mg/kg wet | 0.1900 | | 61 | 40-140 | 34 | 30 | D+ |
| Dalapon | 0.409 | 0.046 | mg/kg wet | 0.4550 | | 90 | 40-140 | 12 | 30 | |
| Dalapon [2C] | 0.392 | 0.046 | mg/kg wet | 0.4550 | | 86 | 40-140 | 15 | 30 | |
| Dicamba | 0.021 | 0.009 | mg/kg wet | 0.01880 | | 110 | 40-140 | 16 | 30 | |
| Dicamba [2C] | 0.018 | 0.009 | mg/kg wet | 0.01880 | | 94 | 40-140 | 16 | 30 | |
| Dichlorprop | 0.209 | 0.047 | mg/kg wet | 0.1880 | | 111 | 40-140 | 12 | 30 | |
| Dichlorprop [2C] | 0.172 | 0.047 | mg/kg wet | 0.1880 | | 92 | 40-140 | 11 | 30 | |
| Dinoseb | 0.022 | 0.048 | mg/kg wet | 0.09500 | | 23 | 10-100 | 21 | 30 | |
| Dinoseb [2C] | 0.018 | 0.048 | mg/kg wet | 0.09500 | | 19 | 10-100 | 23 | 30 | |
| MCPA | 18.4 | 2.32 | mg/kg wet | 18.60 | | 99 | 40-140 | 3 | 30 | |
| MCPA [2C] | 18.7 | 2.32 | mg/kg wet | 18.60 | | 101 | 40-140 | 26 | 30 | |
| MCPP | 19.4 | 2.35 | mg/kg wet | 18.80 | | 103 | 40-140 | 15 | 30 | |
| MCPP [2C] | 16.6 | 2.35 | mg/kg wet | 18.80 | | 88 | 40-140 | 9 | 30 | |
| *Surrogate: DCAA* | *0.265* | | mg/kg wet | *0.2000* | | *132* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.251* | | mg/kg wet | *0.2000* | | *126* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK72909 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CK72909 - 3546** | | | | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.59* | | mg/kg wet | *3.333* | | *78* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK72909 - 3546** | | | | | | | | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.06* | | mg/kg wet | *5.000* | | *101* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *4.24* | | mg/kg wet | *5.000* | | *85* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.88* | | mg/kg wet | *3.333* | | *86* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *4.18* | | mg/kg wet | *5.000* | | *84* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.03* | | mg/kg wet | *3.333* | | *91* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *4.35* | | mg/kg wet | *5.000* | | *87* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.99* | | mg/kg wet | *3.333* | | *120* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.77 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.46 | 0.333 | mg/kg wet | 3.333 | | 104 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 3.34 | 0.333 | mg/kg wet | 3.333 | | 100 | 30-130 | | | |
| 2,4-Dichlorophenol | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 30-130 | | | |
| 2,4-Dimethylphenol | 3.02 | 0.333 | mg/kg wet | 3.333 | | 90 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.70 | 1.67 | mg/kg wet | 3.333 | | 81 | 30-130 | | | |
| 2,4-Dinitrotoluene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| 2,6-Dinitrotoluene | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| 2-Chloronaphthalene | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| 2-Chlorophenol | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 30-130 | | | |
| 2-Methylnaphthalene | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| 2-Methylphenol | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 30-130 | | | |
| 2-Nitrophenol | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.48 | 0.667 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 3+4-Methylphenol | 5.75 | 0.667 | mg/kg wet | 6.667 | | 86 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| 4-Chloroaniline | 2.25 | 0.667 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| 4-Nitrophenol | 2.90 | 1.67 | mg/kg wet | 3.333 | | 87 | 30-130 | | | |
| Acenaphthene | 2.93 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Acenaphthylene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Acetophenone | 2.87 | 0.667 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Aniline | 2.57 | 1.67 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| Anthracene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Azobenzene | 3.12 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Benzo(a)anthracene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Benzo(a)pyrene | 3.16 | 0.167 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Benzo(b)fluoranthene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.12 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Butylbenzylphthalate | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CK72909 - 3546** | | | | | | | | | | |
| Chrysene | 3.07 | 0.167 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.24 | 0.167 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Dibenzofuran | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Diethylphthalate | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Dimethylphthalate | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Di-n-butylphthalate | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Di-n-octylphthalate | 3.25 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Fluoranthene | 3.05 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Fluorene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Hexachlorobenzene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Hexachlorobutadiene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Hexachloroethane | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Isophorone | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Naphthalene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Nitrobenzene | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| N-Nitrosodimethylamine | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Pentachlorophenol | 3.16 | 1.67 | mg/kg wet | 3.333 | | 95 | 30-130 | | | |
| Phenanthrene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Phenol | 2.85 | 0.333 | mg/kg wet | 3.333 | | 85 | 30-130 | | | |
| Pyrene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.07* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.12* | | mg/kg wet | *5.000* | | *122* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *4.94* | | mg/kg wet | *5.000* | | *99* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.45* | | mg/kg wet | *3.333* | | *103* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.04* | | mg/kg wet | *5.000* | | *101* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.47* | | mg/kg wet | *3.333* | | *104* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.09* | | mg/kg wet | *5.000* | | *102* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.56* | | mg/kg wet | *3.333* | | *107* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 5 | 30 | |
| 1,2-Dichlorobenzene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 3 | 30 | |
| 1,3-Dichlorobenzene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 0.3 | 30 | |
| 1,4-Dichlorobenzene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 2 | 30 | |
| 2,4,5-Trichlorophenol | 3.52 | 0.333 | mg/kg wet | 3.333 | | 106 | 30-130 | 2 | 30 | |
| 2,4,6-Trichlorophenol | 3.38 | 0.333 | mg/kg wet | 3.333 | | 101 | 30-130 | 1 | 30 | |
| 2,4-Dichlorophenol | 3.27 | 0.333 | mg/kg wet | 3.333 | | 98 | 30-130 | 9 | 30 | |
| 2,4-Dimethylphenol | 3.30 | 0.333 | mg/kg wet | 3.333 | | 99 | 30-130 | 9 | 30 | |
| 2,4-Dinitrophenol | 3.00 | 1.67 | mg/kg wet | 3.333 | | 90 | 30-130 | 10 | 30 | |
| 2,4-Dinitrotoluene | 3.52 | 0.333 | mg/kg wet | 3.333 | | 106 | 40-140 | 9 | 30 | |
| 2,6-Dinitrotoluene | 3.23 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 6 | 30 | |
| 2-Chloronaphthalene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 2 | 30 | |
| 2-Chlorophenol | 3.05 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | 9 | 30 | |
| 2-Methylnaphthalene | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 9 | 30 | |
| 2-Methylphenol | 3.15 | 0.333 | mg/kg wet | 3.333 | | 94 | 30-130 | 12 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

## 8270D Semi-Volatile Organic Compounds

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CK72909 - 3546** | | | | | | | | | | |
| 2-Nitrophenol | 3.29 | 0.333 | mg/kg wet | 3.333 | | 99 | 30-130 | 7 | 30 | |
| 3,3´-Dichlorobenzidine | 2.38 | 0.667 | mg/kg wet | 3.333 | | 71 | 40-140 | 4 | 30 | |
| 3+4-Methylphenol | 6.58 | 0.667 | mg/kg wet | 6.667 | | 99 | 30-130 | 14 | 30 | |
| 4-Bromophenyl-phenylether | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 1 | 30 | |
| 4-Chloroaniline | 2.37 | 0.667 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| 4-Nitrophenol | 3.22 | 1.67 | mg/kg wet | 3.333 | | 97 | 30-130 | 11 | 30 | |
| Acenaphthene | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 4 | 30 | |
| Acenaphthylene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 4 | 30 | |
| Acetophenone | 3.21 | 0.667 | mg/kg wet | 3.333 | | 96 | 40-140 | 11 | 30 | |
| Aniline | 2.86 | 1.67 | mg/kg wet | 3.333 | | 86 | 40-140 | 11 | 30 | |
| Anthracene | 3.28 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 5 | 30 | |
| Azobenzene | 3.31 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 6 | 30 | |
| Benzo(a)anthracene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 4 | 30 | |
| Benzo(a)pyrene | 3.32 | 0.167 | mg/kg wet | 3.333 | | 100 | 40-140 | 5 | 30 | |
| Benzo(b)fluoranthene | 3.42 | 0.333 | mg/kg wet | 3.333 | | 103 | 40-140 | 6 | 30 | |
| Benzo(g,h,i)perylene | 3.30 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 5 | 30 | |
| Benzo(k)fluoranthene | 3.31 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 4 | 30 | |
| bis(2-Chloroethoxy)methane | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 7 | 30 | |
| bis(2-Chloroethyl)ether | 3.45 | 0.333 | mg/kg wet | 3.333 | | 103 | 40-140 | 6 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 7 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.67 | 0.333 | mg/kg wet | 3.333 | | 110 | 40-140 | 17 | 30 | |
| Butylbenzylphthalate | 3.58 | 0.333 | mg/kg wet | 3.333 | | 107 | 40-140 | 15 | 30 | |
| Chrysene | 3.18 | 0.167 | mg/kg wet | 3.333 | | 95 | 40-140 | 3 | 30 | |
| Dibenzo(a,h)Anthracene | 3.41 | 0.167 | mg/kg wet | 3.333 | | 102 | 40-140 | 5 | 30 | |
| Dibenzofuran | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 6 | 30 | |
| Diethylphthalate | 3.42 | 0.333 | mg/kg wet | 3.333 | | 103 | 40-140 | 10 | 30 | |
| Dimethylphthalate | 3.33 | 0.333 | mg/kg wet | 3.333 | | 100 | 40-140 | 6 | 30 | |
| Di-n-butylphthalate | 3.52 | 0.333 | mg/kg wet | 3.333 | | 106 | 40-140 | 11 | 30 | |
| Di-n-octylphthalate | 3.85 | 0.333 | mg/kg wet | 3.333 | | 115 | 40-140 | 17 | 30 | |
| Fluoranthene | 3.12 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 2 | 30 | |
| Fluorene | 3.30 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 6 | 30 | |
| Hexachlorobenzene | 3.23 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 0.5 | 30 | |
| Hexachlorobutadiene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.07 | 30 | |
| Hexachloroethane | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 4 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.39 | 0.333 | mg/kg wet | 3.333 | | 102 | 40-140 | 5 | 30 | |
| Isophorone | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 9 | 30 | |
| Naphthalene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 6 | 30 | |
| Nitrobenzene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 6 | 30 | |
| N-Nitrosodimethylamine | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 4 | 30 | |
| Pentachlorophenol | 3.29 | 1.67 | mg/kg wet | 3.333 | | 99 | 30-130 | 4 | 30 | |
| Phenanthrene | 3.12 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 4 | 30 | |
| Phenol | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 30-130 | 12 | 30 | |
| Pyrene | 3.34 | 0.333 | mg/kg wet | 3.333 | | 100 | 40-140 | 12 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.98* | | mg/kg wet | *3.333* | | *90* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.01* | | mg/kg wet | *5.000* | | *120* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CK72909 - 3546** | | | | | | | | | | |
| *Surrogate: 2-Chlorophenol-d4* | *5.24* | | mg/kg wet | *5.000* | | *105* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.35* | | mg/kg wet | *3.333* | | *100* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.20* | | mg/kg wet | *5.000* | | *104* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.60* | | mg/kg wet | *3.333* | | *108* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.56* | | mg/kg wet | *5.000* | | *111* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.91* | | mg/kg wet | *3.333* | | *117* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CK72949 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 200 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 10400 | 200 | mg/kg | 10000 | | 104 | 80-120 | | | |
| Total Organic Carbon (2) | 10800 | 200 | mg/kg | 10000 | | 108 | 80-120 | | | |
| Total Organic Carbon (Average) | 10600 | 200 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 10400 | 200 | mg/kg | 10000 | | 104 | 80-120 | 0.8 | 200 | |
| Total Organic Carbon (2) | 10400 | 200 | mg/kg | 10000 | | 104 | 80-120 | 4 | 200 | |
| Total Organic Carbon (Average) | 10400 | 200 | mg/kg dry wt | | | | | | | |
| **Batch CL70653 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 200 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 11400 | 200 | mg/kg | 10000 | | 114 | 80-120 | | | |
| Total Organic Carbon (2) | 11500 | 200 | mg/kg | 10000 | | 115 | 80-120 | | | |
| Total Organic Carbon (Average) | 11400 | 200 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 11300 | 200 | mg/kg | 10000 | | 113 | 80-120 | 0.4 | 200 | |
| Total Organic Carbon (2) | 11300 | 200 | mg/kg | 10000 | | 113 | 80-120 | 1 | 200 | |
| Total Organic Carbon (Average) | 11300 | 200 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.70 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711726

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| Z-08 | See Attached |
| XH | Peaks found in the retention time window for MCPP did not confirm by GC/MS. |
| X* | RSD of replicate analysis >25%, reanalysis produced similar results, sample is non-homogeneous. |
| U | Analyte included in the analysis, but not detected |
| R- | Standard Reference Material is biased low (R-). |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD+ | Continuing Calibration %Diff/Drift is above control limit (CD+). |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711726

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

## Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

# REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

**Report Prepared Date:**

December 12, 2017

## Report Information:

**Pace Project #: 10412845**
**Sample Receipt Date: 12/01/2017**
**Client Project #: 1711726**
**Client Sub PO #: B02407**
**State Cert #: N/A**

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Joanne Richardson

December 12, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

## Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## DISCUSSION

This report presents the results from the analyses performed on eight samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 35-75%. Except for one low value, which was flagged "R" on the results table, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

A laboratory spike sample was also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 107-128%. These results were within the target range for the method. Matrix spikes were prepared with the sample batch using sample material from a separate project; results from these analyses will be provided upon request.

The response obtained for the labeled OCDD in calibration standard analysis F171209A_17 was outside the target range. As specified in the method, the average of the daily response factors for this compound was used in the calculations for the samples from this runshift. The affected values were flagged "Y" on the results tables. It should be noted that the accuracy of the native congener determinations was not impacted by this deviation.



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Minnesota Laboratory Certifications

| Authority | Certificate # | Authority | Certificate # |
|---|---|---|---|
| A2LA | 2926.01 | Mississippi | MN00064 |
| Alabama | 40770 | Montana | CERT0092 |
| Alaska | MN00064 | Nebraska | NE-OS-18-06 |
| Alaska | UST-078 | Nevada | MN00064 |
| Arizona | AZ0014 | New Jersey (NE | MN002 |
| Arkansas | 88-0680 | New York (NEL | 11647 |
| CNMI Saipan | MP0003 | New hampshire | 2081 |
| California | MN00064 | North Carolina | 27700 |
| Colorado | MN00064 | North Carolina | 530 |
| Connecticut | PH-0256 | North Dakota | R-036 |
| EPA Region 8 | 8TMS-L | Ohio | 41244 |
| Florida (NELAP | E87605 | Ohio VAP | CL101 |
| Georgia (EDP) | 959 | Oklahoma | 9507 |
| Guam EPA | 959 | Oregon (ELAP) | MN200001 |
| Hawaii | MN00064 | Oregon (OREL | MN300001 |
| Idaho | MN00064 | Pennsylvania | 68-00563 |
| Illinois | 200011 | Puerto Rico | MN00064 |
| Indiana | C-MN-01 | South Carolina | 74003001 |
| Iowa | 368 | Tennessee | TN02818 |
| Kansas | E-10167 | Texas | T104704192 |
| Kentucky | 90062 | Utah (NELAP) | MN00064 |
| Louisiana | 03086 | Virginia | 460163 |
| Louisiana | MN00064 | Washington | C486 |
| Maine | MN00064 | West Virginia # | 9952C |
| Maryland | 322 | West Virginia D | 382 |
| Michigan | 9909 | Wisconsin | 999407970 |
| Minnesota | 027-053-137 | Wyoming | 8TMS-L |

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix A

Sample Management

10412845

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1711726

Turn Time ___ Standard Other **DUE 12/7/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1711726 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: ext 3083 | City , State: | Zip: | PO #: B02407 |
| Tel.: | email: smorrell@thielsch.com | | |

Analysis: Dioxin EPA 8290

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Dioxin EPA 8290 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 11/28/17 | 1420 | G | S | 1711726-01 | 1 | 1 | AG | | X | | | | | | | | | 001 |
| | 11/28/17 | 1423 | G | S | 1711726-02 | 1 | 1 | AG | | X | | | | | | | | | 002 |
| | 11/28/17 | 1426 | G | S | 1711726-03 | 1 | 1 | AG | | X | | | | | | | | | 003 |
| | 11/28/17 | 1430 | G | S | 1711726-04 | 1 | 1 | AG | | X | | | | | | | | | 004 |
| | 11/28/17 | 1434 | G | S | 1711726-05 | 1 | 1 | AG | | X | | | | | | | | | 005 |
| | 11/28/17 | 1438 | G | S | 1711726-06 | 1 | 1 | AG | | X | | | | | | | | | 006 |
| | 11/28/17 | 1442 | G | S | 1711726-07 | 1 | 1 | AG | | X | | | | | | | | | 007 |
| | 11/28/17 | 1446 | G | S | 1711726-08 | 1 | 1 | AG | | X | | | | | | | | | 008 |
| | 11/28/17 | 1450 | G | S | 1711726-09 | 1 | 1 | AG | | X | | | | | | | | | 009 |
| | 11/28/17 | 1455 | G | S | 1711726-10 | 1 | 1 | AG | | X | | | | | | | | | 010 |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present X Yes ____ No

Seals Intact X Yes ____ No ~~NA: X~~ 12/1/17

Cooler Temperature: 5.6°C JD

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 11/29/17 1455 | UPS | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | 12/1/17 1000 | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

CHANGES MADE - 12/1/17 - ML

Report No....10412845_8290FC_DFR

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1711726

Turn Time ___ Standard Other **DUE 12/7/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1711726 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: ext 3083 | City , State: | Zip: | PO #: B02407 |
| Tel. | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ~~11/28/17~~ | ~~1420~~ | ~~G~~ | ~~S~~ | ~~1711726-01~~ | ~~1~~ | ~~1~~ | ~~AG~~ | | ~~X~~ | | | | | | | |
| | ~~11/28/17~~ | ~~1423~~ | ~~G~~ | ~~S~~ | ~~1711726-02~~ | ~~1~~ | ~~1~~ | ~~AG~~ | | ~~X~~ | | | | | | | |
| | 11/28/17 | 1426 | G | S | 1711726-03 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1430 | G | S | 1711726-04 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1434 | G | S | 1711726-05 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1438 | G | S | 1711726-06 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1442 | G | S | 1711726-07 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1446 | G | S | 1711726-08 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1450 | G | S | 1711726-09 | 1 | 1 | AG | | X | | | | | | | |
| | 11/28/17 | 1455 | G | S | 1711726-10 | 1 | 1 | AG | | X | | | | | | | |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 11/29/17 1455 | UPS | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 30Aug2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.21** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS Laboratory

**Project #:** WO#: 10412845

10412845

**Courier:** ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 1Z0357497014594137 00

**Custody Seal on Cooler/Box Present?** ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

**Thermometer Used:** ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

**Cooler Temp Read (°C):** 5.1 **Cooler Temp Corrected (°C):** 5.6 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 12/1/17

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | | | COMMENTS: |
|---|---|---|---|---|
| Chain of Custody Present? | ☒ Yes | ☐ No | | 1. |
| Chain of Custody Filled Out? | ☒ Yes | ☐ No | | 2. |
| Chain of Custody Relinquished? | ☐ Yes | ☒ No | | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes | ☒ No | ☐ N/A | 4. |
| Samples Arrived within Hold Time? | ☒ Yes | ☐ No | | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes | ☒ No | | 6. |
| **Rush Turn Around Time Requested?** | ☒ Yes | ☐ No | | 7. |
| Sufficient Volume? | ☒ Yes | ☐ No | | 8. |
| Correct Containers Used? | ☒ Yes | ☐ No | | 9. |
| -Pace Containers Used? | ☒ Yes | ☐ No | | |
| Containers Intact? | ☒ Yes | ☐ No | | 10. |
| Filtered Volume Received for Dissolved Tests? | ☐ Yes | ☐ No | ☒ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☒ Yes | ☐ No | | 12. |
| All containers needing acid/base preservation have been checked? | ☐ Yes | ☐ No | ☒ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N Sample # |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes | ☐ No | ☒ N/A | |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes | ☐ No | ☒ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes | ☐ No | ☒ N/A | 14. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☒ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☒ N/A | |
| Pace Trip Blank Lot # (if purchased): | | | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: Revised chain of custody provided by Marc Levesque on 12-1-17.

**Project Manager Review:** Joanne Richardson **Date:** 12-1-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix B

Sample Analysis  Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-03 | | | |
| Lab Sample ID | 10412845003 | | | |
| Filename | U171208B_10 | | | |
| Injected By | ZMS | | | |
| Total Amount Extracted | 11.3 g | Matrix | Solid | |
| % Moisture | 4.0 | Dilution | NA | |
| Dry Weight Extracted | 10.8 g | Collected | 11/28/2017 | 14:26 |
| ICAL ID | U171107 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | U171208A_17 & U171208B_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 | 06:00 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 64 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 67 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 69 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 68 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 71 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 73 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 75 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 65 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 59 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 66 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 50 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 56 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-04 | | | |
| Lab Sample ID | 10412845004 | | | |
| Filename | U171208B_11 | | | |
| Injected By | ZMS | | | |
| Total Amount Extracted | 11.1 g | Matrix | Solid | |
| % Moisture | 4.0 | Dilution | NA | |
| Dry Weight Extracted | 10.7 g | Collected | 11/28/2017 | 14:30 |
| ICAL ID | U171107 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | U171208A_17 & U171208B_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 | 06:45 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 65 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 61 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 61 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 63 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 67 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 61 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 56 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 54 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 61 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 46 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 61 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1711726-05 | | |
| Lab Sample ID | 10412845005 | | |
| Filename | U171208B_12 | | |
| Injected By | ZMS | | |
| Total Amount Extracted | 11.0 g | Matrix | Solid |
| % Moisture | 3.7 | Dilution | NA |
| Dry Weight Extracted | 10.6 g | Collected | 11/28/2017 14:34 |
| ICAL ID | U171107 | Received | 12/01/2017 10:00 |
| CCal Filename(s) | U171208A_17 & U171208B_17 | Extracted | 12/04/2017 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 07:29 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 45 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 49 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 51 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 48 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 77 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 77 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 47 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 73 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 67 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 65 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 54 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 66 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 43 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 46 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-06 | | | |
| Lab Sample ID | 10412845006 | | | |
| Filename | U171208B_13 | | | |
| Injected By | ZMS | | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid | |
| % Moisture | 3.7 | Dilution | NA | |
| Dry Weight Extracted | 10.4 g | Collected | 11/28/2017 | 14:38 |
| ICAL ID | U171107 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | U171208A_17 & U171208B_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 | 08:14 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 68 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 62 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 62 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 71 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 72 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 68 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 59 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 67 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 49 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 63 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-07 | | | |
| Lab Sample ID | 10412845007 | | | |
| Filename | U171212A_04 | | | |
| Injected By | SMT | | | |
| Total Amount Extracted | 10.9 g | Matrix | Solid | |
| % Moisture | 3.6 | Dilution | NA | |
| Dry Weight Extracted | 10.5 g | Collected | 11/28/2017 | 14:42 |
| ICAL ID | U171107 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | U171212A_01 & U171212A_08 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/12/2017 | 11:31 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 55 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 46 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 53 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 48 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 66 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 70 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 50 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 58 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 62 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 43 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 49 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 35 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 47 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-08 | | | |
| Lab Sample ID | 10412845008 | | | |
| Filename | U171208B_15 | | | |
| Injected By | ZMS | | | |
| Total Amount Extracted | 11.6 g | Matrix | Solid | |
| % Moisture | 4.0 | Dilution | NA | |
| Dry Weight Extracted | 11.1 g | Collected | 11/28/2017 | 14:46 |
| ICAL ID | U171107 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | U171208A_17 & U171208B_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 | 09:43 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 66 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 62 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 64 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 66 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 68 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 60 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 57 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 66 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 49 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 62 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-09 | | | |
| Lab Sample ID | 10412845009 | | | |
| Filename | F171209A_13 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.9 g | Matrix | Solid | |
| % Moisture | 16.4 | Dilution | NA | |
| Dry Weight Extracted | 9.95 g | Collected | 11/28/2017 | 14:50 |
| ICAL ID | F171206 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | F171209A_01 & F171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 | 21:24 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 56 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 57 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 51 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 51 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 51 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 45 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 54 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 49 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 45 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 40 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 47 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 40 Y |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 52 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
Y = Calculated using average of daily RFs

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711726-10 | | | |
| Lab Sample ID | 10412845010 | | | |
| Filename | F171209A_14 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.3 g | Matrix | Solid | |
| % Moisture | 18.2 | Dilution | NA | |
| Dry Weight Extracted | 9.24 g | Collected | 11/28/2017 | 14:55 |
| ICAL ID | F171206 | Received | 12/01/2017 | 10:00 |
| CCal Filename(s) | F171209A_01 & F171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58992 | Analyzed | 12/09/2017 | 22:07 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 62 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 63 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 66 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 71 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 66 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 65 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 52 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 63 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 57 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 47 Y |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
Y = Calculated using average of daily RFs

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-58992 | Matrix | Solid |
| Filename | Y171207A_15 | Dilution | NA |
| Total Amount Extracted | 20.3 g | Extracted | 12/04/2017 14:40 |
| ICAL ID | Y171107 | Analyzed | 12/08/2017 00:48 |
| CCal Filename(s) | Y171207A_05 & Y171207A_19 | Injected By | SMT |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 84 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 72 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 89 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 91 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 91 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 92 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 88 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 93 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 82 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 90 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 70 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 69 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 68 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 71 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 67 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 77 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-58993 | | |
| Filename | Y171207A_07 | Matrix | Solid |
| Total Amount Extracted | 20.9 g | Dilution | NA |
| ICAL ID | Y171107 | Extracted | 12/04/2017 14:40 |
| CCal Filename(s) | Y171207A_05 & Y171207A_19 | Analyzed | 12/07/2017 18:09 |
| Method Blank ID | BLANK-58992 | Injected By | |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.24 | 122 | 2,3,7,8-TCDF-13C | 2.0 | 93 |
| Total TCDF | | | | 2,3,7,8-TCDD-13C | 2.0 | 80 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.0 | 101 |
| 2,3,7,8-TCDD | 0.20 | 0.24 | 122 | 2,3,4,7,8-PeCDF-13C | 2.0 | 104 |
| Total TCDD | | | | 1,2,3,7,8-PeCDD-13C | 2.0 | 103 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.0 | 101 |
| 1,2,3,7,8-PeCDF | 1.0 | 1.2 | 124 | 1,2,3,6,7,8-HxCDF-13C | 2.0 | 91 |
| 2,3,4,7,8-PeCDF | 1.0 | 1.1 | 110 | 2,3,4,6,7,8-HxCDF-13C | 2.0 | 100 |
| Total PeCDF | | | | 1,2,3,7,8,9-HxCDF-13C | 2.0 | 94 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.0 | 95 |
| 1,2,3,7,8-PeCDD | 1.0 | 1.2 | 118 | 1,2,3,6,7,8-HxCDD-13C | 2.0 | 79 |
| Total PeCDD | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 75 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 78 |
| 1,2,3,4,7,8-HxCDF | 1.0 | 1.2 | 120 | 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 80 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 1.2 | 120 | OCDD-13C | 4.0 | 72 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 1.1 | 113 | | | |
| 1,2,3,7,8,9-HxCDF | 1.0 | 1.1 | 110 | 1,2,3,4-TCDD-13C | 2.0 | NA |
| Total HxCDF | | | | 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 1,2,3,4,7,8-HxCDD | 1.0 | 1.3 | 128 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 84 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 1.2 | 118 | | | |
| 1,2,3,7,8,9-HxCDD | 1.0 | 1.2 | 116 | | | |
| Total HxCDD | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 1.2 | 117 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 1.1 | 110 | | | |
| Total HpCDF | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 1.1 | 107 | | | |
| Total HpCDD | | | | | | |
| OCDF | 2.0 | 2.5 | 124 | | | |
| OCDD | 2.0 | 2.4 | 120 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711726
Date Received: 11/28/2017
Project Due Date: 12/5/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.1 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 1-10
    Analysis: **Dioxin**
    TAT: 5 day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: 11/28/17 Time: 3248 By:

Sample Receiving Notes:

**Trip blank added** RL 11/28/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 185504 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 185523 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 185524 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 185570 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 01 | 185571 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 01 | 185573 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 185574 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 185503 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 185521 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 185522 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 185565 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 185566 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 02 | 185568 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 185569 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 185502 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 185519 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 185520 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 185560 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 185561 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 03 | 185563 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 185564 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 185501 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 185517 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 185518 | Yes | NA | Yes | VOA Vial - Other | Other | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711726
Date Received: 11/28/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 185555 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 04 | 185556 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 04 | 185558 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 185559 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 185500 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 185515 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 185516 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 185550 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 185551 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 05 | 185553 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 185554 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 185499 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 185513 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 185514 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 185545 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 185546 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 06 | 185548 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 185549 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 185498 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 185511 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 185512 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 185540 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 185541 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 07 | 185543 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 185544 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 185497 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 185509 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 185510 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 185535 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 185536 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 08 | 185538 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 185539 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 185496 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 185507 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 185508 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 185530 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 185531 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 09 | 185533 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 185534 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 185495 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 185505 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 185506 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 185525 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 185526 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 10 | 185528 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 185529 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 185575 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 11 | 185576 | Yes | NA | Yes | VOA Vial - Other | Other |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: [signature] Date & Time: 11/28/17 2035
Reviewed By: [signature] Date & Time: 11/28/17 2050
Delivered By: [signature] 11/28/17 2050

changes made 11/29/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1711726

Turn Time: 5-Day Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits: S-1
Electonic Deliverables: ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/28/17 | 2:20 | Grab | Soil | Type A - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 11/28/17 | 2:23 | Grab | Soil | Type A - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 11/28/17 | 2:26 | Grab | Soil | Type A - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 11/28/17 | 2:30 | Grab | Soil | Type A - Capping Sand - 005 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 11/28/17 | 2:34 | Grab | Soil | Type A - Capping Sand - 006 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 11/28/17 | 2:38 | Grab | Soil | Type A - Capping Sand - 007 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 11/28/17 | 2:42 | Grab | Soil | Type A - Capping Sand - 008 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 11/28/17 | 2:46 | Grab | Soil | Type A - Capping Sand - 009 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 11/28/17 | 2:50 | Grab | Soil | Type C - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 11/28/17 | 2:55 | Grab | Soil | Type C - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |
| 11 | | | | | Trip blank | | | | | | | | | | | |

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

**Laboratory Use Only**
Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 1.1

Sampled by : Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 11/28 4:15 | 11/28/17 16:17 | 11/28/17 19:05 | 11/28/17 1955 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilson 11/28 4:15 | | | |

SPS

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1711726 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →) |

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/28/17 | 2:20 | Grab | Soil | Type A - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 11/28/17 | 2:23 | Grab | Soil | Type A - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 11/28/17 | 2:26 | Grab | Soil | Type A - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 11/28/17 | 2:30 | Grab | Soil | Type A - Capping Sand - 005 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 11/28/17 | 2:34 | Grab | Soil | Type A - Capping Sand - 006 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 11/28/17 | 2:38 | Grab | Soil | Type A - Capping Sand - 007 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 11/28/17 | 2:42 | Grab | Soil | Type A - Capping Sand - 008 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 11/28/17 | 2:46 | Grab | Soil | Type A - Capping Sand - 009 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 11/28/17 | 2:50 | Grab | Soil | Type C - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 11/28/17 | 2:55 | Grab | Soil | Type C - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |
| 11 | | | | | Trip blank | | | | | | | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: yes
Seals Intact: n/a
Cooler Temperature: °C ice temp: 1.1

**Sampled by :** Aggregate Industries QC

**Comments:** Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 11/28 4:15 | [signature] 11/28/17 16:17 | [signature] 11/28/17 19:05 | [signature] 11/28/17 1955 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilson 11/28 4:15 | | | |

SPS

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1711796**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 2:34 pm, Dec 18, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
Pace Analytical - Minneapolis, MN Dioxin

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

## SAMPLE RECEIPT

The following samples were received on November 30, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on November 30, 2017 at 19:53.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1711796-01 | Type A - Capping Sand -010 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-02 | Type A - Capping Sand -011 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-03 | Type A - Capping Sand -012 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-04 | Type A - Capping Sand -013 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-05 | Type A - Capping Sand -014 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-06 | Type C - Capping Sand -004 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-07 | Type C - Capping Sand -005 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-08 | Type C - Capping Sand -006 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-09 | Type C - Capping Sand -007 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1711796-10 | Type C - Capping Sand -008 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

C7L0012-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
sec-Butylbenzene (23% @ 20%)

C7L0040-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
sec-Butylbenzene (25% @ 20%)

CL70426-BS1 **Blank Spike recovery is below lower control limit (B-).**
Dichlorodifluoromethane (67% @ 70-130%)

CL70426-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Dichlorodifluoromethane (64% @ 70-130%)

**8151A Chlorinated Herbicides**

1711796-07 **Modified result**
MCPP , MCPP [2C]

1711796-07 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

1711796-09 **Surrogate recovery(ies) below lower control limit (S-).**
DCAA [2C] (27% @ 30-150%)

C7L0076-CCV2 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4,5-T (20% @ 15%), 2,4,5-TP (Silvex) (18% @ 15%), 2,4-D (17% @ 15%), 2,4-DB (19% @ 15%), Dichlorprop (16% @ 15%), Dinoseb (21% @ 15%), MCPP (16% @ 15%)

CL70139-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Dinoseb (38% @ 30%), Dinoseb [2C] (41% @ 30%)

CL70530-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Dalapon [2C] (41% @ 30%)

**8270D Semi-Volatile Organic Compounds**

C7L0008-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dichlorophenol (100% @ 80-120%), 2,4-Dinitrotoluene (92% @ 80-120%)

C7L0008-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%)

C7L0008-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (31% @ 20%), 2-Methylphenol (32% @ 20%), 4-Nitrophenol (31% @ 20%), Benzo(k)fluoranthene (22% @ 20%), Fluorene (25% @ 20%), Pentachlorophenol (26% @ 20%)

C7L0009-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dichlorophenol (108% @ 80-120%), 2,4-Dinitrotoluene (109% @ 80-120%)

C7L0009-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (101% @ 80-120%), Pentachlorophenol (94% @ 80-120%)

C7L0009-CCV1 **Surrogate recovery(ies) above upper control limit (S+).**
2,4,6-Tribromophenol (122% @ 80-120%)

C7L0022-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (82% @ 80-120%), Pentachlorophenol (82% @ 80-120%)

C7L0022-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
N-Nitrosodimethylamine (24% @ 20%)

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1711796

C7L0051-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%), Pentachlorophenol (81% @ 80-120%)

C7L0051-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (31% @ 20%), N-Nitrosodimethylamine (26% @ 20%)

CL70110-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Hexachloroethane (33% @ 30%)

**Classical Chemistry**

1711796-01 **RSD >25% between replicate analysis, samples non-homogeneous.**
Total Organic Carbon (Average)

1711796-04 **RSD >25% between replicate analysis, samples non-homogeneous.**
Total Organic Carbon (Average)

1711796-05 **RSD >25% between replicate analysis, samples non-homogeneous.**
Total Organic Carbon (Average)

**Total Metals**

CL70133-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (23% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1711796-01 through 1711796-10**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (X) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | (X) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | ( ) MassDEP EPH CAM IV B | (X) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for '"Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes (X) No ( )* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard

Date: December 13, 2017

Printed Name: Laurel Stoddard

Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.50) | | 6020A | | 20 | NAR | 12/04/17 11:44 | 2.08 | 100 | CL70133 |
| Arsenic | ND (2.49) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| Barium | ND (2.49) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| **Beryllium** | **0.38** (0.11) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| Cadmium | ND (0.50) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| Chromium | ND (1.00) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| **Lead** | **5.80** (4.98) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| Mercury | ND (0.022) | | 7471B | | 1 | MJV | 12/01/17 15:29 | 0.94 | 40 | CK73030 |
| Nickel | ND (2.49) | | 6010C | | 1 | KJK | 12/05/17 13:01 | 2.08 | 100 | CL70133 |
| Selenium | ND (0.50) | | 6020A | | 20 | NAR | 12/04/17 11:44 | 2.08 | 100 | CL70133 |
| Silver | ND (0.50) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| Thallium | ND (0.50) | | 6020A | | 20 | NAR | 12/04/17 11:44 | 2.08 | 100 | CL70133 |
| Vanadium | ND (1.00) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |
| **Zinc** | **7.66** (2.49) | | 6010C | | 1 | KJK | 12/01/17 20:50 | 2.08 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 4.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0022) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Acetone | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Benzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 4.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Bromoform | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Chloroform | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0022) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Styrene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Toluene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 4.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Xylene O | ND (0.0055) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0110) | | 8260B Low | | 1 | 12/01/17 18:36 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *104 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 20.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0205) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/04/17 19:53 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *62 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *48 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *53 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:11 | | CL70107 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *79 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *73 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| MCPA | ND (2.38) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/06/17 18:32 | C7L0076 | CL70139 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *65 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 1,2-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 1,3-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 1,4-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,4,5-Trichlorophenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,4,6-Trichlorophenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,4-Dichlorophenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,4-Dimethylphenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,4-Dinitrophenol | ND (1.75) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,4-Dinitrotoluene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2,6-Dinitrotoluene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2-Chloronaphthalene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2-Chlorophenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2-Methylnaphthalene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2-Methylphenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 2-Nitrophenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 3,3′-Dichlorobenzidine | ND (0.700) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 3+4-Methylphenol | ND (0.700) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 4-Bromophenyl-phenylether | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 4-Chloroaniline | ND (0.700) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| 4-Nitrophenol | ND (1.75) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Acenaphthene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Acenaphthylene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Acetophenone | ND (0.700) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Aniline | ND (1.75) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Anthracene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Azobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Benzo(a)anthracene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Benzo(a)pyrene | ND (0.175) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Benzo(b)fluoranthene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Benzo(g,h,i)perylene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Benzo(k)fluoranthene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| bis(2-Chloroethyl)ether | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| bis(2-chloroisopropyl)Ether | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| bis(2-Ethylhexyl)phthalate | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Butylbenzylphthalate | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Chrysene | ND (0.175) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Dibenzo(a,h)Anthracene | ND (0.175) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Dibenzofuran | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Diethylphthalate | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Dimethylphthalate | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Di-n-butylphthalate | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Di-n-octylphthalate | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Fluoranthene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Fluorene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Hexachlorobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Hexachlorobutadiene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Hexachloroethane | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Indeno(1,2,3-cd)Pyrene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Isophorone | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Naphthalene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Nitrobenzene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| N-Nitrosodimethylamine | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Pentachlorophenol | ND (1.75) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Phenanthrene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Phenol | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |
| Pyrene | ND (0.350) | | 8270D | | 1 | 12/01/17 18:01 | C7L0008 | CL70110 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *71 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *66 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *74 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *74 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *73 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *77 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -010
Date Sampled: 11/30/17 13:45
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **X* 386** (146) | | 9060 | | 1 | DEL | 12/07/17 19:21 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.51) | | 6020A | | 20 | NAR | 12/04/17 12:01 | 2.05 | 100 | CL70133 |
| Arsenic | ND (2.54) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| Barium | ND (2.54) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| **Beryllium** | **0.37** (0.11) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| Cadmium | ND (0.51) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| Chromium | ND (1.01) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| **Lead** | **6.12** (5.07) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| Mercury | ND (0.018) | | 7471B | | 1 | MJV | 12/01/17 15:31 | 1.13 | 40 | CK73030 |
| Nickel | ND (2.54) | | 6010C | | 1 | KJK | 12/05/17 13:30 | 2.05 | 100 | CL70133 |
| Selenium | ND (0.51) | | 6020A | | 20 | NAR | 12/04/17 12:01 | 2.05 | 100 | CL70133 |
| Silver | ND (0.51) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| Thallium | ND (0.51) | | 6020A | | 20 | NAR | 12/04/17 12:01 | 2.05 | 100 | CL70133 |
| Vanadium | ND (1.01) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |
| **Zinc** | **8.41** (2.54) | | 6010C | | 1 | KJK | 12/01/17 20:54 | 2.05 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0019) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.0945) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| **Acetone** | **0.0119** (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Benzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Bromoform | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Chloroform | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0019) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Styrene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Toluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Xylene O | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0094) | | 8260B Low | | 1 | 12/01/17 19:01 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *111 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *106 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Aldrin | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0199) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Endrin | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0025) | | 8081B | | 1 | 12/04/17 21:18 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *67 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *44 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *49 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:30 | | CL70107 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *79 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *87 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| MCPA | ND (2.39) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |
| MCPP | ND (2.42) | | 8151A | | 1 | 12/06/17 20:15 | C7L0076 | CL70139 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *73 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 1,2-Dichlorobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 1,3-Dichlorobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 1,4-Dichlorobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,4,5-Trichlorophenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,4,6-Trichlorophenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,4-Dichlorophenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,4-Dimethylphenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,4-Dinitrophenol | ND (1.67) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,4-Dinitrotoluene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2,6-Dinitrotoluene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2-Chloronaphthalene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2-Chlorophenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2-Methylnaphthalene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2-Methylphenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 2-Nitrophenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 3,3′-Dichlorobenzidine | ND (0.667) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 3+4-Methylphenol | ND (0.667) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 4-Bromophenyl-phenylether | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 4-Chloroaniline | ND (0.667) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| 4-Nitrophenol | ND (1.67) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Acenaphthene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Acenaphthylene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Acetophenone | ND (0.667) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Aniline | ND (1.67) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Anthracene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Azobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Benzo(a)anthracene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Benzo(a)pyrene | ND (0.167) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Benzo(b)fluoranthene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Benzo(g,h,i)perylene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Benzo(k)fluoranthene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| bis(2-Chloroethyl)ether | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| bis(2-chloroisopropyl)Ether | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| bis(2-Ethylhexyl)phthalate | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Butylbenzylphthalate | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Chrysene | ND (0.167) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Dibenzo(a,h)Anthracene | ND (0.167) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Dibenzofuran | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Diethylphthalate | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Dimethylphthalate | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Di-n-butylphthalate | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Di-n-octylphthalate | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Fluoranthene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Fluorene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Hexachlorobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Hexachlorobutadiene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Hexachloroethane | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Indeno(1,2,3-cd)Pyrene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Isophorone | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Naphthalene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Nitrobenzene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| N-Nitrosodimethylamine | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Pentachlorophenol | ND (1.67) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Phenanthrene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Phenol | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |
| Pyrene | ND (0.333) | | 8270D | | 1 | 12/01/17 18:35 | C7L0008 | CL70110 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *69 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *82 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *83 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *78 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *76 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *82 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *83 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -011
Date Sampled: 11/30/17 13:48
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **965** (227) | | 9060 | | 1 | DEL | 12/06/17 2:22 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.35) | | 6020A | | 20 | NAR | 12/04/17 12:07 | 2.95 | 100 | CL70133 |
| Arsenic | ND (1.76) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| Barium | ND (1.76) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| **Beryllium** | **0.33** (0.08) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| Cadmium | ND (0.35) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| **Chromium** | **0.72** (0.70) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| **Lead** | **4.20** (3.51) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| Mercury | ND (0.021) | | 7471B | | 1 | MJV | 12/01/17 15:33 | 1 | 40 | CK73030 |
| Nickel | ND (1.76) | | 6010C | | 1 | KJK | 12/05/17 13:34 | 2.95 | 100 | CL70133 |
| Selenium | ND (0.35) | | 6020A | | 20 | NAR | 12/04/17 12:07 | 2.95 | 100 | CL70133 |
| Silver | ND (0.35) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| Thallium | ND (0.35) | | 6020A | | 20 | NAR | 12/04/17 12:07 | 2.95 | 100 | CL70133 |
| Vanadium | ND (0.70) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |
| **Zinc** | **4.95** (1.76) | | 6010C | | 1 | KJK | 12/01/17 20:58 | 2.95 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Acetone | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Benzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Bromoform | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Chloroform | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Styrene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Toluene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Xylene O | ND (0.0052) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0104) | | 8260B Low | | 1 | 12/01/17 19:26 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *111 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *106 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *101 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0217) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/04/17 21:47 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *64 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *45 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *52 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/04/17 15:48 | | CL70107 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *80 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *88 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *89 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 10
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| MCPA | ND (2.41) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |
| MCPP | ND (2.43) | | 8151A | | 1 | 12/06/17 20:50 | C7L0076 | CL70139 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *75 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 1,2-Dichlorobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 1,3-Dichlorobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 1,4-Dichlorobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,4,5-Trichlorophenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,4,6-Trichlorophenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,4-Dichlorophenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,4-Dimethylphenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,4-Dinitrophenol | ND (1.64) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,4-Dinitrotoluene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2,6-Dinitrotoluene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2-Chloronaphthalene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2-Chlorophenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2-Methylnaphthalene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2-Methylphenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 2-Nitrophenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 3,3′-Dichlorobenzidine | ND (0.656) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 3+4-Methylphenol | ND (0.656) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 4-Bromophenyl-phenylether | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 4-Chloroaniline | ND (0.656) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| 4-Nitrophenol | ND (1.64) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Acenaphthene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Acenaphthylene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Acetophenone | ND (0.656) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Aniline | ND (1.64) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Anthracene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Azobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Benzo(a)anthracene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Benzo(a)pyrene | ND (0.164) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Benzo(b)fluoranthene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Benzo(g,h,i)perylene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Benzo(k)fluoranthene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| bis(2-Chloroethyl)ether | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| bis(2-chloroisopropyl)Ether | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| bis(2-Ethylhexyl)phthalate | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Butylbenzylphthalate | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Chrysene | ND (0.164) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Dibenzo(a,h)Anthracene | ND (0.164) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Dibenzofuran | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Diethylphthalate | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Dimethylphthalate | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Di-n-butylphthalate | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Di-n-octylphthalate | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Fluoranthene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Fluorene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Hexachlorobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Hexachlorobutadiene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Hexachloroethane | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Indeno(1,2,3-cd)Pyrene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Isophorone | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Naphthalene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Nitrobenzene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| N-Nitrosodimethylamine | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Pentachlorophenol | ND (1.64) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Phenanthrene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Phenol | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |
| Pyrene | ND (0.328) | | 8270D | | 1 | 12/01/17 19:09 | C7L0008 | CL70110 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *75 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *66 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *79 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97
Initial Volume: 15.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *74 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *75 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *78 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *84 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -012
Date Sampled: 11/30/17 13:51
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **366** (189) | | 9060 | | 1 | DEL | 12/07/17 20:11 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.45) | | 6020A | | 20 | NAR | 12/04/17 12:13 | 2.29 | 100 | CL70133 |
| Arsenic | ND (2.26) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| **Barium** | **2.96** (2.26) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| **Beryllium** | **0.36** (0.10) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| Cadmium | ND (0.45) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| Chromium | ND (0.90) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| **Lead** | **5.10** (4.52) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| Mercury | ND (0.026) | | 7471B | | 1 | MJV | 12/01/17 15:35 | 0.8 | 40 | CK73030 |
| Nickel | ND (2.26) | | 6010C | | 1 | KJK | 12/05/17 13:38 | 2.29 | 100 | CL70133 |
| Selenium | ND (0.45) | | 6020A | | 20 | NAR | 12/04/17 12:13 | 2.29 | 100 | CL70133 |
| Silver | ND (0.45) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| Thallium | ND (0.45) | | 6020A | | 20 | NAR | 12/04/17 12:13 | 2.29 | 100 | CL70133 |
| Vanadium | ND (0.90) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |
| **Zinc** | **6.36** (2.26) | | 6010C | | 1 | KJK | 12/01/17 21:15 | 2.29 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Acetone | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Benzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Bromoform | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Chloroform | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Styrene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Toluene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Xylene O | ND (0.0051) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0101) | | 8260B Low | | 1 | 12/01/17 19:51 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *105 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0207) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:15 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *73 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *84 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *55 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *58 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:07 | | CL70107 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *81 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *71 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.009) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.009) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.047) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| Dalapon | ND (0.045) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| Dinoseb | ND (0.047) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| MCPA | ND (2.31) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |
| MCPP | ND (2.34) | | 8151A | | 1 | 12/06/17 21:24 | C7L0076 | CL70139 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *74 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *87 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 1,2-Dichlorobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 1,3-Dichlorobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 1,4-Dichlorobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,4,5-Trichlorophenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,4,6-Trichlorophenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,4-Dichlorophenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,4-Dimethylphenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,4-Dinitrophenol | ND (1.85) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,4-Dinitrotoluene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2,6-Dinitrotoluene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2-Chloronaphthalene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2-Chlorophenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2-Methylnaphthalene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2-Methylphenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 2-Nitrophenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 3,3′-Dichlorobenzidine | ND (0.739) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 3+4-Methylphenol | ND (0.739) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 4-Bromophenyl-phenylether | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 4-Chloroaniline | ND (0.739) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| 4-Nitrophenol | ND (1.85) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Acenaphthene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Acenaphthylene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Acetophenone | ND (0.739) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Aniline | ND (1.85) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Anthracene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Azobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Benzo(a)anthracene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Benzo(a)pyrene | ND (0.185) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Benzo(b)fluoranthene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Benzo(g,h,i)perylene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Benzo(k)fluoranthene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| bis(2-Chloroethyl)ether | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| bis(2-chloroisopropyl)Ether | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| bis(2-Ethylhexyl)phthalate | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Butylbenzylphthalate | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Chrysene | ND (0.185) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Dibenzo(a,h)Anthracene | ND (0.185) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Dibenzofuran | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Diethylphthalate | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Dimethylphthalate | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Di-n-butylphthalate | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Di-n-octylphthalate | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Fluoranthene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Fluorene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Hexachlorobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Hexachlorobutadiene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Hexachloroethane | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Indeno(1,2,3-cd)Pyrene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Isophorone | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Naphthalene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Nitrobenzene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| N-Nitrosodimethylamine | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Pentachlorophenol | ND (1.85) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Phenanthrene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Phenol | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |
| Pyrene | ND (0.369) | | 8270D | | 1 | 12/01/17 19:43 | C7L0008 | CL70110 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *73 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *69 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *78 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *84 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *73 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *73 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *76 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *76 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -013
Date Sampled: 11/30/17 13:54
Percent Solids: 97

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **X* 316** (119) | | 9060 | | 1 | DEL | 12/07/17 21:00 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/04/17 12:19 | 2.15 | 100 | CL70133 |
| Arsenic | ND (2.42) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| **Barium** | **2.57** (2.42) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| **Beryllium** | **0.36** (0.11) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| Chromium | ND (0.97) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| **Lead** | **6.81** (4.84) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| Mercury | ND (0.021) | | 7471B | | 1 | MJV | 12/01/17 15:37 | 0.97 | 40 | CK73030 |
| Nickel | ND (2.42) | | 6010C | | 1 | KJK | 12/05/17 13:42 | 2.15 | 100 | CL70133 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/04/17 12:19 | 2.15 | 100 | CL70133 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| Thallium | ND (0.48) | | 6020A | | 20 | NAR | 12/04/17 12:19 | 2.15 | 100 | CL70133 |
| Vanadium | ND (0.97) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |
| **Zinc** | **8.53** (2.42) | | 6010C | | 1 | KJK | 12/01/17 21:19 | 2.15 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0019) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.0963) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Acetone | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Benzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Bromoform | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Chloroform | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0019) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Styrene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Toluene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 5.4
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Xylene O | ND (0.0048) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0096) | | 8260B Low | | 1 | 12/01/17 20:16 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *110 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *94 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *106 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0211) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/04/17 22:44 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *71 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *49 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *56 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/04/17 16:25 | | CL70107 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *83 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.009) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.009) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.047) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| Dalapon | ND (0.045) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| Dinoseb | ND (0.047) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| MCPA | ND (2.32) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |
| MCPP | ND (2.35) | | 8151A | | 1 | 12/06/17 21:59 | C7L0076 | CL70139 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *72 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *86 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 1,2-Dichlorobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 1,3-Dichlorobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 1,4-Dichlorobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,4,5-Trichlorophenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,4,6-Trichlorophenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,4-Dichlorophenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,4-Dimethylphenol | ND (0.094) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,4-Dinitrophenol | ND (1.75) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,4-Dinitrotoluene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2,6-Dinitrotoluene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2-Chloronaphthalene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2-Chlorophenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2-Methylnaphthalene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2-Methylphenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 2-Nitrophenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 3,3′-Dichlorobenzidine | ND (0.698) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 3+4-Methylphenol | ND (0.698) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 4-Bromophenyl-phenylether | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 4-Chloroaniline | ND (0.698) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| 4-Nitrophenol | ND (1.75) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Acenaphthene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Acenaphthylene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Acetophenone | ND (0.698) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Aniline | ND (1.75) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Anthracene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Azobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Benzo(a)anthracene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Benzo(a)pyrene | ND (0.175) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Benzo(b)fluoranthene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Benzo(g,h,i)perylene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Benzo(k)fluoranthene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| bis(2-Chloroethyl)ether | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| bis(2-chloroisopropyl)Ether | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| bis(2-Ethylhexyl)phthalate | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Butylbenzylphthalate | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Chrysene | ND (0.175) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Dibenzo(a,h)Anthracene | ND (0.175) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Dibenzofuran | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Diethylphthalate | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Dimethylphthalate | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Di-n-butylphthalate | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Di-n-octylphthalate | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Fluoranthene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Fluorene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Hexachlorobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Hexachlorobutadiene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Hexachloroethane | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Indeno(1,2,3-cd)Pyrene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Isophorone | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Naphthalene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Nitrobenzene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| N-Nitrosodimethylamine | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Pentachlorophenol | ND (1.75) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Phenanthrene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Phenol | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |
| Pyrene | ND (0.349) | | 8270D | | 1 | 12/01/17 20:18 | C7L0008 | CL70110 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *71 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *62 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *76 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *77 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96
Initial Volume: 14.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/1/17 13:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *72 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *74 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *86 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand -014
Date Sampled: 11/30/17 13:57
Percent Solids: 96

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **X* 1040** (129) | | 9060 | | 1 | DEL | 12/07/17 21:17 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.57) | | 6020A | | 20 | NAR | 12/04/17 12:25 | 2.18 | 100 | CL70133 |
| **Arsenic** | **16.6** (2.83) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| **Barium** | **22.3** (2.83) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| **Beryllium** | **0.39** (0.12) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| Cadmium | ND (0.57) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| **Chromium** | **61.4** (1.13) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| **Lead** | **26.4** (5.65) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 12/01/17 15:39 | 0.78 | 40 | CK73030 |
| **Nickel** | **23.2** (2.83) | | 6010C | | 1 | KJK | 12/05/17 13:46 | 2.18 | 100 | CL70133 |
| Selenium | ND (0.57) | | 6020A | | 20 | NAR | 12/04/17 12:25 | 2.18 | 100 | CL70133 |
| Silver | ND (0.57) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| Thallium | ND (0.57) | | 6020A | | 20 | NAR | 12/04/17 12:25 | 2.18 | 100 | CL70133 |
| **Vanadium** | **16.5** (1.13) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |
| **Zinc** | **31.8** (2.83) | | 6010C | | 1 | KJK | 12/01/17 21:23 | 2.18 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0019) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.0934) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Acetone | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Benzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Bromoform | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Chloroform | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0019) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Styrene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Toluene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Xylene O | ND (0.0047) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0093) | | 8260B Low | | 1 | 12/01/17 20:42 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *109 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *94 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *106 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Aldrin | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0257) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Endrin | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0019) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0032) | | 8081B | | 1 | 12/04/17 23:12 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *76 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *92 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *68 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:13 | | CL70107 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *86 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *93 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *73 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 10.7
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| 2,4-D | ND (0.054) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.055) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| Dalapon | ND (0.052) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.054) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| Dinoseb | ND (0.055) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| MCPA | ND (2.68) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |
| MCPP [2C] | ND (2.71) | | 8151A | | 1 | 12/06/17 22:33 | C7L0076 | CL70139 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *57 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *69 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 1,2-Dichlorobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 1,3-Dichlorobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 1,4-Dichlorobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,4,5-Trichlorophenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,4,6-Trichlorophenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,4-Dichlorophenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,4-Dimethylphenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,4-Dinitrophenol | ND (2.19) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,4-Dinitrotoluene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2,6-Dinitrotoluene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2-Chloronaphthalene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2-Chlorophenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2-Methylnaphthalene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2-Methylphenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 2-Nitrophenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 3,3′-Dichlorobenzidine | ND (0.874) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 3+4-Methylphenol | ND (0.874) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 4-Bromophenyl-phenylether | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 4-Chloroaniline | ND (0.874) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| 4-Nitrophenol | ND (2.19) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Acenaphthene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Acenaphthylene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Acetophenone | ND (0.874) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Aniline | ND (2.19) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Anthracene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Azobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Benzo(a)anthracene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Benzo(a)pyrene | ND (0.219) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Benzo(b)fluoranthene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Benzo(g,h,i)perylene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Benzo(k)fluoranthene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| bis(2-Chloroethyl)ether | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| bis(2-chloroisopropyl)Ether | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| bis(2-Ethylhexyl)phthalate | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Butylbenzylphthalate | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Chrysene | ND (0.219) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Dibenzo(a,h)Anthracene | ND (0.219) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Dibenzofuran | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Diethylphthalate | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Dimethylphthalate | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Di-n-butylphthalate | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Di-n-octylphthalate | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Fluoranthene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Fluorene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Hexachlorobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Hexachlorobutadiene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Hexachloroethane | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Indeno(1,2,3-cd)Pyrene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Isophorone | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Naphthalene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Nitrobenzene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| N-Nitrosodimethylamine | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Pentachlorophenol | ND (2.19) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Phenanthrene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Phenol | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |
| Pyrene | ND (0.437) | | 8270D | | 1 | 12/05/17 20:47 | C7L0051 | CL70412 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *76 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *94 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *82 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *86 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *84 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *92 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *83 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *84 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -004
Date Sampled: 11/30/17 14:00
Percent Solids: 81

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **195** (159) | | 9060 | | 1 | DEL | 12/07/17 21:34 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.49) | | 6020A | | 20 | NAR | 12/04/17 12:30 | 2.36 | 100 | CL70133 |
| **Arsenic** | **15.7** (2.45) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| **Barium** | **16.1** (2.45) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| **Beryllium** | **0.38** (0.11) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| Cadmium | ND (0.49) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| **Chromium** | **41.1** (0.98) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| **Lead** | **26.0** (4.90) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/01/17 15:41 | 0.92 | 40 | CK73030 |
| **Nickel** | **18.3** (2.45) | | 6010C | | 1 | KJK | 12/05/17 13:50 | 2.36 | 100 | CL70133 |
| Selenium | ND (0.49) | | 6020A | | 20 | NAR | 12/04/17 12:30 | 2.36 | 100 | CL70133 |
| Silver | ND (0.49) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| Thallium | ND (0.49) | | 6020A | | 20 | NAR | 12/04/17 12:30 | 2.36 | 100 | CL70133 |
| **Vanadium** | **12.4** (0.98) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |
| **Zinc** | **24.2** (2.45) | | 6010C | | 1 | KJK | 12/01/17 21:27 | 2.36 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,1,1-Trichloroethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,1,2-Trichloroethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,1-Dichloroethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,1-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,1-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2,3-Trichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2,3-Trichloropropane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2,4-Trichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2,4-Trimethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2-Dibromoethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2-Dichloroethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,2-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,3,5-Trimethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,3-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,3-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,4-Dichlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 1,4-Dioxane | ND (0.0918) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 2,2-Dichloropropane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 2-Butanone | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 2-Chlorotoluene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 2-Hexanone | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 4-Chlorotoluene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 4-Isopropyltoluene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| 4-Methyl-2-Pentanone | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Acetone | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Benzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Bromobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Bromochloromethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Bromoform | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Bromomethane | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Carbon Disulfide | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Carbon Tetrachloride | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Chlorobenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Chloroethane | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Chloroform | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Chloromethane | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| cis-1,2-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| cis-1,3-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Dibromomethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Dichlorodifluoromethane | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Diethyl Ether | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Di-isopropyl ether | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Ethyl tertiary-butyl ether | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Ethylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Hexachlorobutadiene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Isopropylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Methyl tert-Butyl Ether | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Methylene Chloride | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Naphthalene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| n-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| n-Propylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| sec-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Styrene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| tert-Butylbenzene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Tertiary-amyl methyl ether | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Tetrachloroethene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Tetrahydrofuran | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Toluene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| trans-1,3-Dichloropropene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Trichloroethene | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Trichlorofluoromethane | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Vinyl Chloride | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Xylene O | ND (0.0046) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Xylene P,M | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | C7L0012 | CL70124 |
| Xylenes (Total) | ND (0.0092) | | 8260B Low | | 1 | 12/01/17 21:07 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *110 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *107 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Aldrin | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0242) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Endrin | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0018) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0030) | | 8081B | | 1 | 12/04/17 23:41 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *56 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *49 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *57 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/1/17 16:00

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/04/17 19:32 | | CL70107 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *97 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *81 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *88 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/1/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| 2,4-D | ND (0.053) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| 2,4-DB | ND (0.053) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| Dalapon | ND (0.051) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| Dichlorprop | ND (0.053) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| Dinoseb | ND (0.053) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| MCPA | ND (2.61) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |
| MCPP | # ND (2.64) | | 8151A | | 1 | 12/06/17 23:08 | C7L0076 | CL70139 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *63 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *77 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 1,2-Dichlorobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 1,3-Dichlorobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 1,4-Dichlorobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,4,5-Trichlorophenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,4,6-Trichlorophenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,4-Dichlorophenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,4-Dimethylphenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,4-Dinitrophenol | ND (2.01) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,4-Dinitrotoluene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2,6-Dinitrotoluene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2-Chloronaphthalene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2-Chlorophenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2-Methylnaphthalene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2-Methylphenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 2-Nitrophenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 3,3′-Dichlorobenzidine | ND (0.804) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 3+4-Methylphenol | ND (0.804) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 4-Bromophenyl-phenylether | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 4-Chloroaniline | ND (0.804) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| 4-Nitrophenol | ND (2.01) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Acenaphthene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Acenaphthylene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Acetophenone | ND (0.804) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Aniline | ND (2.01) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Anthracene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Azobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Benzo(a)anthracene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Benzo(a)pyrene | ND (0.201) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Benzo(b)fluoranthene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Benzo(g,h,i)perylene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Benzo(k)fluoranthene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| bis(2-Chloroethyl)ether | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| bis(2-chloroisopropyl)Ether | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| bis(2-Ethylhexyl)phthalate | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Butylbenzylphthalate | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Chrysene | ND (0.201) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Dibenzo(a,h)Anthracene | ND (0.201) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Dibenzofuran | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Diethylphthalate | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Dimethylphthalate | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Di-n-butylphthalate | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Di-n-octylphthalate | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Fluoranthene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Fluorene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Hexachlorobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Hexachlorobutadiene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Hexachloroethane | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Indeno(1,2,3-cd)Pyrene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Isophorone | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Naphthalene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Nitrobenzene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| N-Nitrosodimethylamine | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Pentachlorophenol | ND (2.01) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Phenanthrene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Phenol | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |
| Pyrene | ND (0.401) | | 8270D | | 1 | 12/05/17 22:32 | C7L0051 | CL70412 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *81 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *95 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *84 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *86 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *89 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *86 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *87 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -005
Date Sampled: 11/30/17 14:05
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (236) | | 9060 | | 1 | DEL | 12/07/17 21:52 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 12/04/17 15:14 | 2.52 | 100 | CL70133 |
| **Arsenic** | **14.7** (2.31) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| **Barium** | **19.1** (2.31) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| **Beryllium** | **0.42** (0.10) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| **Chromium** | **46.5** (0.92) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| **Lead** | **26.7** (4.61) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| Mercury | ND (0.028) | | 7471B | | 1 | BJV | 12/05/17 13:42 | 0.81 | 40 | CL70134 |
| **Nickel** | **18.5** (2.31) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 12/04/17 15:14 | 2.52 | 100 | CL70133 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 12/04/17 15:14 | 2.52 | 100 | CL70133 |
| **Vanadium** | **13.2** (0.92) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |
| **Zinc** | **26.2** (2.31) | | 6010C | | 1 | KJK | 12/05/17 10:17 | 2.52 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,1,1-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,1,2-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,1-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,1-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,1-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2,3-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2,3-Trichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2,4-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2,4-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2-Dibromoethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,3,5-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,3-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,3-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,4-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 1,4-Dioxane | ND (0.0880) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 2,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 2-Butanone | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 2-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 2-Hexanone | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 4-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 4-Isopropyltoluene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| 4-Methyl-2-Pentanone | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Acetone | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Benzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Bromobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Bromochloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Bromoform | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Bromomethane | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Carbon Disulfide | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Carbon Tetrachloride | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Chlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Chloroethane | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Chloroform | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Chloromethane | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| cis-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| cis-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Dibromomethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Dichlorodifluoromethane | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Diethyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Di-isopropyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Ethyl tertiary-butyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Ethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Hexachlorobutadiene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Isopropylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Methyl tert-Butyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Methylene Chloride | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Naphthalene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| n-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| n-Propylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| sec-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Styrene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| tert-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Tertiary-amyl methyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Tetrachloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Tetrahydrofuran | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Toluene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| trans-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Trichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Trichlorofluoromethane | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Vinyl Chloride | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Xylene O | ND (0.0044) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Xylene P,M | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | C7L0040 | CL70426 |
| Xylenes (Total) | ND (0.0088) | | 8260B Low | | 1 | 12/04/17 19:00 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *104 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *101 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Aldrin | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0242) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Endrin | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0018) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0030) | | 8081B | | 1 | 12/05/17 0:09 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *72 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *60 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *65 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/4/17 16:10

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/05/17 13:59 | | CL70409 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *77 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *72 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *93 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *102 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/5/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| 2,4-D | ND (0.054) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| 2,4-DB | ND (0.054) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| Dalapon | ND (0.052) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| Dichlorprop | ND (0.054) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| Dinoseb | ND (0.054) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| MCPA | ND (2.65) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |
| MCPP | ND (2.68) | | 8151A | | 1 | 12/07/17 15:38 | C7L0076 | CL70530 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *41 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *37 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 1,2-Dichlorobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 1,3-Dichlorobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 1,4-Dichlorobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,4,5-Trichlorophenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,4,6-Trichlorophenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,4-Dichlorophenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,4-Dimethylphenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,4-Dinitrophenol | ND (1.97) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,4-Dinitrotoluene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2,6-Dinitrotoluene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2-Chloronaphthalene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2-Chlorophenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2-Methylnaphthalene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2-Methylphenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 2-Nitrophenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 3,3′-Dichlorobenzidine | ND (0.785) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 3+4-Methylphenol | ND (0.785) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 4-Bromophenyl-phenylether | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 4-Chloroaniline | ND (0.785) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| 4-Nitrophenol | ND (1.97) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Acenaphthene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Acenaphthylene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Acetophenone | ND (0.785) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Aniline | ND (1.97) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Anthracene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Azobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Benzo(a)anthracene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Benzo(a)pyrene | ND (0.197) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Benzo(b)fluoranthene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Benzo(g,h,i)perylene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Benzo(k)fluoranthene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| bis(2-Chloroethyl)ether | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| bis(2-chloroisopropyl)Ether | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| bis(2-Ethylhexyl)phthalate | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Butylbenzylphthalate | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Chrysene | ND (0.197) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Dibenzo(a,h)Anthracene | ND (0.197) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Dibenzofuran | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Diethylphthalate | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Dimethylphthalate | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Di-n-butylphthalate | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Di-n-octylphthalate | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Fluoranthene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Fluorene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Hexachlorobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Hexachlorobutadiene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Hexachloroethane | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Indeno(1,2,3-cd)Pyrene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Isophorone | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Naphthalene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Nitrobenzene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| N-Nitrosodimethylamine | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Pentachlorophenol | ND (1.97) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Phenanthrene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Phenol | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |
| Pyrene | ND (0.392) | | 8270D | | 1 | 12/05/17 23:07 | C7L0051 | CL70412 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *66 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *80 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *71 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *78 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *74 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *82 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *71 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *71 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -006
Date Sampled: 11/30/17 14:10
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **385** (213) | | 9060 | | 1 | DEL | 12/06/17 3:34 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.55) | | 6020A | | 20 | NAR | 12/04/17 15:20 | 2.1 | 100 | CL70133 |
| **Arsenic** | **17.1** (2.77) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| **Barium** | **21.3** (2.77) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| **Beryllium** | **0.46** (0.12) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| Cadmium | ND (0.55) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| **Chromium** | **50.2** (1.11) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| **Lead** | **31.4** (5.54) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| Mercury | ND (0.026) | | 7471B | | 1 | BJV | 12/05/17 13:44 | 0.87 | 40 | CL70134 |
| **Nickel** | **20.7** (2.77) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| Selenium | ND (0.55) | | 6020A | | 20 | NAR | 12/04/17 15:20 | 2.1 | 100 | CL70133 |
| Silver | ND (0.55) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| Thallium | ND (0.55) | | 6020A | | 20 | NAR | 12/04/17 15:20 | 2.1 | 100 | CL70133 |
| **Vanadium** | **13.9** (1.11) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |
| **Zinc** | **28.4** (2.77) | | 6010C | | 1 | KJK | 12/05/17 10:21 | 2.1 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 1,4-Dioxane | ND (0.0868) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 2-Butanone | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 2-Hexanone | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| 4-Methyl-2-Pentanone | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Acetone | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Bromomethane | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Chloroethane | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Chloromethane | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Dichlorodifluoromethane | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Methylene Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Vinyl Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Xylene P,M | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | C7L0040 | CL70426 |
| Xylenes (Total) | ND (0.0087) | | 8260B Low | | 1 | 12/04/17 19:26 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *105 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *102 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *101 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0232) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/05/17 0:38 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *70 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *75 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *52 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *61 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/4/17 16:10

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/05/17 14:18 | | CL70409 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *83 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *96 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *92 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/5/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| 2,4-D | ND (0.053) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| 2,4-DB | ND (0.054) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| Dalapon | ND (0.051) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| Dichlorprop | ND (0.053) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| Dinoseb | ND (0.054) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| MCPA | ND (2.62) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |
| MCPP | ND (2.65) | | 8151A | | 1 | 12/07/17 16:14 | C7L0076 | CL70530 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *32 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *27 %* | *S-* | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 1,2-Dichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 1,3-Dichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 1,4-Dichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,4,5-Trichlorophenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,4,6-Trichlorophenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,4-Dichlorophenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,4-Dimethylphenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,4-Dinitrophenol | ND (1.93) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,4-Dinitrotoluene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2,6-Dinitrotoluene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2-Chloronaphthalene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2-Chlorophenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2-Methylnaphthalene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2-Methylphenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 2-Nitrophenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 3,3′-Dichlorobenzidine | ND (0.770) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 3+4-Methylphenol | ND (0.770) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 4-Bromophenyl-phenylether | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 4-Chloroaniline | ND (0.770) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| 4-Nitrophenol | ND (1.93) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Acenaphthene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Acenaphthylene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Acetophenone | ND (0.770) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Aniline | ND (1.93) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Anthracene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Azobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Benzo(a)anthracene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Benzo(a)pyrene | ND (0.193) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Benzo(b)fluoranthene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Benzo(g,h,i)perylene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Benzo(k)fluoranthene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| bis(2-Chloroethyl)ether | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| bis(2-chloroisopropyl)Ether | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| bis(2-Ethylhexyl)phthalate | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Butylbenzylphthalate | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Chrysene | ND (0.193) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Dibenzo(a,h)Anthracene | ND (0.193) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Dibenzofuran | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Diethylphthalate | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Dimethylphthalate | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Di-n-butylphthalate | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Di-n-octylphthalate | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Fluoranthene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Fluorene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Hexachlorobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Hexachlorobutadiene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Hexachloroethane | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Indeno(1,2,3-cd)Pyrene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Isophorone | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Naphthalene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Nitrobenzene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| N-Nitrosodimethylamine | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Pentachlorophenol | ND (1.93) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Phenanthrene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Phenol | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |
| Pyrene | ND (0.385) | | 8270D | | 1 | 12/05/17 23:41 | C7L0051 | CL70412 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *69 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *80 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *75 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *77 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *77 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *81 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *76 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *76 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -007
Date Sampled: 11/30/17 14:13
Percent Solids: 86

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **692** (188) | | 9060 | | 1 | DEL | 12/06/17 4:24 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | FV | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.52) | | 6020A | | 20 | NAR | 12/04/17 15:26 | 2.26 | 100 | CL70133 |
| **Arsenic** | **17.0** (2.60) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| **Barium** | **19.9** (2.60) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| **Beryllium** | **0.49** (0.11) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| Cadmium | ND (0.52) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| **Chromium** | **46.6** (1.04) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| **Lead** | **30.4** (5.20) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| Mercury | ND (0.039) | | 7471B | | 1 | BJV | 12/05/17 13:46 | 0.6 | 40 | CL70134 |
| **Nickel** | **18.6** (2.60) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| Selenium | ND (0.52) | | 6020A | | 20 | NAR | 12/04/17 15:26 | 2.26 | 100 | CL70133 |
| Silver | ND (0.52) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| Thallium | ND (0.52) | | 6020A | | 20 | NAR | 12/04/17 15:26 | 2.26 | 100 | CL70133 |
| **Vanadium** | **13.6** (1.04) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |
| **Zinc** | **26.0** (2.60) | | 6010C | | 1 | KJK | 12/05/17 10:24 | 2.26 | 100 | CL70133 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,1,1-Trichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,1,2-Trichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,1-Dichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,1-Dichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,1-Dichloropropene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2,3-Trichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2,3-Trichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2,4-Trichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2,4-Trimethylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2-Dibromoethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2-Dichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2-Dichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,2-Dichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,3,5-Trimethylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,3-Dichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,3-Dichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,4-Dichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 1,4-Dioxane | ND (0.0979) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 2,2-Dichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 2-Butanone | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 2-Chlorotoluene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 2-Hexanone | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 4-Chlorotoluene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 4-Isopropyltoluene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| 4-Methyl-2-Pentanone | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Acetone | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Benzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Bromobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Bromochloromethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Bromoform | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Bromomethane | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Carbon Disulfide | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Carbon Tetrachloride | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Chlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Chloroethane | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Chloroform | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Chloromethane | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| cis-1,2-Dichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| cis-1,3-Dichloropropene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Dibromomethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Dichlorodifluoromethane | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Diethyl Ether | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Di-isopropyl ether | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Ethyl tertiary-butyl ether | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Ethylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Hexachlorobutadiene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Isopropylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Methyl tert-Butyl Ether | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Methylene Chloride | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Naphthalene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| n-Butylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| n-Propylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| sec-Butylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Styrene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| tert-Butylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Tertiary-amyl methyl ether | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Tetrachloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Tetrahydrofuran | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Toluene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| trans-1,3-Dichloropropene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Trichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Trichlorofluoromethane | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Vinyl Chloride | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Xylene O | ND (0.0049) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Xylene P,M | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | C7L0040 | CL70426 |
| Xylenes (Total) | ND (0.0098) | | 8260B Low | | 1 | 12/04/17 19:51 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *107 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *104 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *101 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 12/4/17 15:44

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| 4,4´-DDE | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| 4,4´-DDT | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Aldrin | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| alpha-BHC | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| alpha-Chlordane | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| beta-BHC | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Chlordane (Total) | ND (0.0245) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| delta-BHC | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Dieldrin | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Endosulfan I | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Endosulfan II | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Endosulfan Sulfate | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Endrin | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Endrin Ketone | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| gamma-BHC (Lindane) | ND (0.0018) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| gamma-Chlordane | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Heptachlor | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Heptachlor Epoxide | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Hexachlorobenzene | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |
| Methoxychlor | ND (0.0031) | | 8081B | | 1 | 12/05/17 1:06 | C7L0023 | CL70414 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *71 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *54 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *62 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/4/17 16:25

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/05/17 15:46 | | CL70410 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *91 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *72 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/5/17 15:30

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| 2,4-D | ND (0.054) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| 2,4-DB | ND (0.054) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| Dalapon | ND (0.052) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| Dicamba | ND (0.011) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| Dichlorprop | ND (0.054) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| Dinoseb | ND (0.054) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| MCPA | ND (2.65) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |
| MCPP | ND (2.68) | | 8151A | | 1 | 12/07/17 16:49 | C7L0076 | CL70530 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *36 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *30 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 1,2-Dichlorobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 1,3-Dichlorobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 1,4-Dichlorobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,4,5-Trichlorophenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,4,6-Trichlorophenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,4-Dichlorophenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,4-Dimethylphenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,4-Dinitrophenol | ND (1.95) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,4-Dinitrotoluene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2,6-Dinitrotoluene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2-Chloronaphthalene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2-Chlorophenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2-Methylnaphthalene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2-Methylphenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 2-Nitrophenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 3,3′-Dichlorobenzidine | ND (0.778) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 3+4-Methylphenol | ND (0.778) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 4-Bromophenyl-phenylether | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 4-Chloroaniline | ND (0.778) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| 4-Nitrophenol | ND (1.95) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Acenaphthene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Acenaphthylene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Acetophenone | ND (0.778) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Aniline | ND (1.95) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Anthracene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Azobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Benzo(a)anthracene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Benzo(a)pyrene | ND (0.195) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Benzo(b)fluoranthene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Benzo(g,h,i)perylene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Benzo(k)fluoranthene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| bis(2-Chloroethyl)ether | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| bis(2-chloroisopropyl)Ether | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| bis(2-Ethylhexyl)phthalate | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Butylbenzylphthalate | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Chrysene | ND (0.195) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Dibenzo(a,h)Anthracene | ND (0.195) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Dibenzofuran | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Diethylphthalate | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Dimethylphthalate | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Di-n-butylphthalate | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Di-n-octylphthalate | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Fluoranthene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Fluorene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Hexachlorobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Hexachlorobutadiene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Hexachloroethane | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Indeno(1,2,3-cd)Pyrene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Isophorone | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Naphthalene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Nitrobenzene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| N-Nitrosodimethylamine | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Pentachlorophenol | ND (1.95) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Phenanthrene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Phenol | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |
| Pyrene | ND (0.389) | | 8270D | | 1 | 12/06/17 0:16 | C7L0051 | CL70412 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *77 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *87 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *82 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *83 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/4/17 14:04

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *83 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *88 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *84 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *82 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -008
Date Sampled: 11/30/17 14:17
Percent Solids: 85

ESS Laboratory Work Order: 1711796
ESS Laboratory Sample ID: 1711796-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (195) | | 9060 | | 1 | DEL | 12/06/17 4:41 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CK73030 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 21.1 | 1.60 | mg/kg wet | 17.80 | | 119 | 67-133 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 22.0 | 1.65 | mg/kg wet | 17.80 | | 123 | 67-133 | 4 | 20 | |
| **Batch CL70133 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Antimony | ND | 0.50 | mg/kg wet | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Selenium | ND | 0.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Thallium | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 56.3 | 4.63 | mg/kg wet | 48.00 | | 117 | 80-120 | | | |
| Arsenic | 122 | 9.26 | mg/kg wet | 123.0 | | 99 | 80-120 | | | |
| Barium | 252 | 9.26 | mg/kg wet | 253.0 | | 100 | 66-134 | | | |
| Beryllium | 171 | 0.41 | mg/kg wet | 192.0 | | 89 | 80-120 | | | |
| Cadmium | 188 | 1.85 | mg/kg wet | 224.0 | | 84 | 80-120 | | | |
| Chromium | 164 | 3.70 | mg/kg wet | 179.0 | | 92 | 80-120 | | | |
| Lead | 135 | 18.5 | mg/kg wet | 145.0 | | 93 | 80-120 | | | |
| Nickel | 140 | 9.26 | mg/kg wet | 143.0 | | 98 | 80-120 | | | |
| Selenium | 42.4 | 4.63 | mg/kg wet | 42.40 | | 100 | 80-120 | | | |
| Silver | 80.2 | 1.85 | mg/kg wet | 81.60 | | 98 | 80-120 | | | |
| Thallium | 49.7 | 4.63 | mg/kg wet | 52.00 | | 96 | 80-120 | | | |
| Vanadium | 64.2 | 3.70 | mg/kg wet | 72.30 | | 89 | 80-120 | | | |
| Zinc | 685 | 9.26 | mg/kg wet | 770.0 | | 89 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 57.6 | 4.63 | mg/kg wet | 48.00 | | 120 | 80-120 | 2 | 30 | |
| Arsenic | 126 | 9.26 | mg/kg wet | 123.0 | | 102 | 80-120 | 3 | 20 | |
| Barium | 200 | 9.26 | mg/kg wet | 253.0 | | 79 | 66-134 | 23 | 20 | D+ |
| Beryllium | 174 | 0.41 | mg/kg wet | 192.0 | | 91 | 80-120 | 2 | 20 | |
| Cadmium | 194 | 1.85 | mg/kg wet | 224.0 | | 87 | 80-120 | 3 | 20 | |
| Chromium | 170 | 3.70 | mg/kg wet | 179.0 | | 95 | 80-120 | 3 | 20 | |
| Lead | 138 | 18.5 | mg/kg wet | 145.0 | | 95 | 80-120 | 2 | 20 | |
| Nickel | 146 | 9.26 | mg/kg wet | 143.0 | | 102 | 80-120 | 4 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CL70133 - 3050B** | | | | | | | | | | |
| Selenium | 42.5 | 4.63 | mg/kg wet | 42.40 | | 100 | 80-120 | 0.2 | 30 | |
| Silver | 83.8 | 1.85 | mg/kg wet | 81.60 | | 103 | 80-120 | 4 | 20 | |
| Thallium | 52.0 | 4.63 | mg/kg wet | 52.00 | | 100 | 80-120 | 4 | 30 | |
| Vanadium | 66.8 | 3.70 | mg/kg wet | 72.30 | | 92 | 80-120 | 4 | 20 | |
| Zinc | 709 | 9.26 | mg/kg wet | 770.0 | | 92 | 80-120 | 3 | 20 | |
| **Batch CL70134 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 16.5 | 1.80 | mg/kg wet | 17.80 | | 93 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 17.7 | 1.87 | mg/kg wet | 17.80 | | 99 | 80-120 | 7 | 20 | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL70124 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70124 - 5035** | | | | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0492* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70124 - 5035** | | | | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0477* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0490* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0519* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0534 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0444 | 0.0020 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0480 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0447 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0484 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,4-Dioxane | 0.857 | 0.100 | mg/kg wet | 1.000 | | 86 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 2-Butanone | 0.229 | 0.0100 | mg/kg wet | 0.2500 | | 91 | 70-130 | | | |
| 2-Chlorotoluene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 2-Hexanone | 0.194 | 0.0100 | mg/kg wet | 0.2500 | | 78 | 70-130 | | | |
| 4-Chlorotoluene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.202 | 0.0100 | mg/kg wet | 0.2500 | | 81 | 70-130 | | | |
| Acetone | 0.233 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | | | |
| Benzene | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Bromobenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Bromochloromethane | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Bromodichloromethane | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Bromoform | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Bromomethane | 0.0427 | 0.0100 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| Carbon Disulfide | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Carbon Tetrachloride | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Chlorobenzene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Chloroethane | 0.0464 | 0.0100 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Chloroform | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70124 - 5035** | | | | | | | | | | |
| Chloromethane | 0.0430 | 0.0100 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Dibromochloromethane | 0.0434 | 0.0020 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Dibromomethane | 0.0449 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0393 | 0.0100 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Diethyl Ether | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Di-isopropyl ether | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Ethylbenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Hexachlorobutadiene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Isopropylbenzene | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Methylene Chloride | 0.0474 | 0.0100 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Naphthalene | 0.0413 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| n-Butylbenzene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| n-Propylbenzene | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| sec-Butylbenzene | 0.0386 | 0.0050 | mg/kg wet | 0.05000 | | 77 | 70-130 | | | |
| Styrene | 0.0418 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| tert-Butylbenzene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Tetrachloroethene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Tetrahydrofuran | 0.0399 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | | | |
| Toluene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Trichloroethene | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Trichlorofluoromethane | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Vinyl Chloride | 0.0447 | 0.0100 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Xylene O | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Xylene P,M | 0.0929 | 0.0100 | mg/kg wet | 0.1000 | | 93 | 70-130 | | | |
| Xylenes (Total) | 0.140 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0503* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0479* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0502* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0476* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 3 | 20 | |
| 1,1,1-Trichloroethane | 0.0542 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 1 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0453 | 0.0020 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| 1,1,2-Trichloroethane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethane | 0.0477 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 3 | 20 | |
| 1,1-Dichloroethene | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| 1,1-Dichloropropene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 4 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL70124 - 5035** | | | | | | | | | | |
| 1,2,3-Trichloropropane | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 0.9 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 4 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 0.2 | 20 | |
| 1,2-Dibromoethane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 5 | 20 | |
| 1,2-Dichlorobenzene | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| 1,2-Dichloroethane | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| 1,2-Dichloropropane | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 4 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| 1,3-Dichlorobenzene | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| 1,3-Dichloropropane | 0.0480 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 4 | 20 | |
| 1,4-Dichlorobenzene | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 1 | 20 | |
| 1,4-Dioxane | 0.898 | 0.100 | mg/kg wet | 1.000 | | 90 | 70-130 | 5 | 20 | |
| 2,2-Dichloropropane | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| 2-Butanone | 0.235 | 0.0100 | mg/kg wet | 0.2500 | | 94 | 70-130 | 3 | 20 | |
| 2-Chlorotoluene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 2 | 20 | |
| 2-Hexanone | 0.200 | 0.0100 | mg/kg wet | 0.2500 | | 80 | 70-130 | 3 | 20 | |
| 4-Chlorotoluene | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 1 | 20 | |
| 4-Isopropyltoluene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 2 | 20 | |
| 4-Methyl-2-Pentanone | 0.207 | 0.0100 | mg/kg wet | 0.2500 | | 83 | 70-130 | 2 | 20 | |
| Acetone | 0.235 | 0.0100 | mg/kg wet | 0.2500 | | 94 | 70-130 | 0.8 | 20 | |
| Benzene | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| Bromobenzene | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 2 | 20 | |
| Bromochloromethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| Bromodichloromethane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 4 | 20 | |
| Bromoform | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 4 | 20 | |
| Bromomethane | 0.0434 | 0.0100 | mg/kg wet | 0.05000 | | 87 | 70-130 | 2 | 20 | |
| Carbon Disulfide | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 2 | 20 | |
| Carbon Tetrachloride | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 1 | 20 | |
| Chlorobenzene | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 4 | 20 | |
| Chloroethane | 0.0477 | 0.0100 | mg/kg wet | 0.05000 | | 95 | 70-130 | 3 | 20 | |
| Chloroform | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| Chloromethane | 0.0444 | 0.0100 | mg/kg wet | 0.05000 | | 89 | 70-130 | 3 | 20 | |
| cis-1,2-Dichloroethene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |
| cis-1,3-Dichloropropene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 4 | 20 | |
| Dibromochloromethane | 0.0456 | 0.0020 | mg/kg wet | 0.05000 | | 91 | 70-130 | 5 | 20 | |
| Dibromomethane | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 5 | 20 | |
| Dichlorodifluoromethane | 0.0392 | 0.0100 | mg/kg wet | 0.05000 | | 78 | 70-130 | 0.2 | 20 | |
| Diethyl Ether | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 5 | 20 | |
| Di-isopropyl ether | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| Ethyl tertiary-butyl ether | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 6 | 20 | |
| Ethylbenzene | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| Hexachlorobutadiene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 1 | 20 | |
| Isopropylbenzene | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 1 | 20 | |
| Methyl tert-Butyl Ether | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 6 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70124 - 5035** | | | | | | | | | | |
| Methylene Chloride | 0.0492 | 0.0100 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| Naphthalene | 0.0429 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | 4 | 20 | |
| n-Butylbenzene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 1 | 20 | |
| n-Propylbenzene | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| sec-Butylbenzene | 0.0394 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | 2 | 20 | |
| Styrene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| tert-Butylbenzene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| Tertiary-amyl methyl ether | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 5 | 20 | |
| Tetrachloroethene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 3 | 20 | |
| Tetrahydrofuran | 0.0423 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 6 | 20 | |
| Toluene | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| trans-1,2-Dichloroethene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 4 | 20 | |
| trans-1,3-Dichloropropene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| Trichloroethene | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 3 | 20 | |
| Trichlorofluoromethane | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 0.8 | 20 | |
| Vinyl Chloride | 0.0460 | 0.0100 | mg/kg wet | 0.05000 | | 92 | 70-130 | 3 | 20 | |
| Xylene O | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| Xylene P,M | 0.0963 | 0.0100 | mg/kg wet | 0.1000 | | 96 | 70-130 | 4 | 20 | |
| Xylenes (Total) | 0.145 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0511* | | mg/kg wet | *0.05000* | | *102* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0502* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0476* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| **Batch CL70426 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70426 - 5035** | | | | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70426 - 5035** | | | | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0465* | | mg/kg wet | *0.05000* | | *93* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0470* | | mg/kg wet | *0.05000* | | *94* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0475* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0510* | | mg/kg wet | *0.05000* | | *102* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0435 | 0.0020 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0477 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0422 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,4-Dioxane | 0.837 | 0.100 | mg/kg wet | 1.000 | | 84 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 2-Butanone | 0.220 | 0.0100 | mg/kg wet | 0.2500 | | 88 | 70-130 | | | |
| 2-Chlorotoluene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 2-Hexanone | 0.186 | 0.0100 | mg/kg wet | 0.2500 | | 74 | 70-130 | | | |
| 4-Chlorotoluene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.195 | 0.0100 | mg/kg wet | 0.2500 | | 78 | 70-130 | | | |
| Acetone | 0.213 | 0.0100 | mg/kg wet | 0.2500 | | 85 | 70-130 | | | |
| Benzene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Bromobenzene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| Bromochloromethane | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Bromodichloromethane | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70426 - 5035** | | | | | | | | | | |
| Bromoform | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Bromomethane | 0.0421 | 0.0100 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| Carbon Disulfide | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Carbon Tetrachloride | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Chlorobenzene | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Chloroethane | 0.0442 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Chloroform | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Chloromethane | 0.0413 | 0.0100 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Dibromochloromethane | 0.0424 | 0.0020 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| Dibromomethane | 0.0435 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0337 | 0.0100 | mg/kg wet | 0.05000 | | 67 | 70-130 | | | B- |
| Diethyl Ether | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Di-isopropyl ether | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Ethylbenzene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Hexachlorobutadiene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Isopropylbenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Methylene Chloride | 0.0462 | 0.0100 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Naphthalene | 0.0394 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| n-Butylbenzene | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| n-Propylbenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| sec-Butylbenzene | 0.0372 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | | | |
| Styrene | 0.0403 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | | | |
| tert-Butylbenzene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Tetrachloroethene | 0.0435 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Tetrahydrofuran | 0.0383 | 0.0050 | mg/kg wet | 0.05000 | | 77 | 70-130 | | | |
| Toluene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Trichloroethene | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Trichlorofluoromethane | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Vinyl Chloride | 0.0422 | 0.0100 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| Xylene O | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Xylene P,M | 0.0894 | 0.0100 | mg/kg wet | 0.1000 | | 89 | 70-130 | | | |
| Xylenes (Total) | 0.135 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0479* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0470* | | mg/kg wet | *0.05000* | | *94* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0493* | | mg/kg wet | *0.05000* | | *99* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0472* | | mg/kg wet | *0.05000* | | *94* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 0.8 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL70426 - 5035** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 2 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0437 | 0.0020 | mg/kg wet | 0.05000 | | 87 | 70-130 | 0.5 | 20 | |
| 1,1,2-Trichloroethane | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 6 | 20 | |
| 1,1-Dichloroethane | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 0.05 | 20 | |
| 1,1-Dichloroethene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 2 | 20 | |
| 1,1-Dichloropropene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 20 | |
| 1,2,3-Trichloropropane | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 0.4 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 1 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0429 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | 2 | 20 | |
| 1,2-Dibromoethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 5 | 20 | |
| 1,2-Dichlorobenzene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| 1,2-Dichloroethane | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 4 | 20 | |
| 1,2-Dichloropropane | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 3 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 5 | 20 | |
| 1,3-Dichlorobenzene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 1 | 20 | |
| 1,3-Dichloropropane | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 4 | 20 | |
| 1,4-Dichlorobenzene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 2 | 20 | |
| 1,4-Dioxane | 0.890 | 0.100 | mg/kg wet | 1.000 | | 89 | 70-130 | 6 | 20 | |
| 2,2-Dichloropropane | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 3 | 20 | |
| 2-Butanone | 0.230 | 0.0100 | mg/kg wet | 0.2500 | | 92 | 70-130 | 4 | 20 | |
| 2-Chlorotoluene | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 4 | 20 | |
| 2-Hexanone | 0.193 | 0.0100 | mg/kg wet | 0.2500 | | 77 | 70-130 | 4 | 20 | |
| 4-Chlorotoluene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| 4-Isopropyltoluene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| 4-Methyl-2-Pentanone | 0.207 | 0.0100 | mg/kg wet | 0.2500 | | 83 | 70-130 | 6 | 20 | |
| Acetone | 0.230 | 0.0100 | mg/kg wet | 0.2500 | | 92 | 70-130 | 8 | 20 | |
| Benzene | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 0.04 | 20 | |
| Bromobenzene | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 2 | 20 | |
| Bromochloromethane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 4 | 20 | |
| Bromodichloromethane | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 3 | 20 | |
| Bromoform | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| Bromomethane | 0.0414 | 0.0100 | mg/kg wet | 0.05000 | | 83 | 70-130 | 2 | 20 | |
| Carbon Disulfide | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 4 | 20 | |
| Carbon Tetrachloride | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 3 | 20 | |
| Chlorobenzene | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 0.3 | 20 | |
| Chloroethane | 0.0433 | 0.0100 | mg/kg wet | 0.05000 | | 87 | 70-130 | 2 | 20 | |
| Chloroform | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 0.7 | 20 | |
| Chloromethane | 0.0406 | 0.0100 | mg/kg wet | 0.05000 | | 81 | 70-130 | 2 | 20 | |
| cis-1,2-Dichloroethene | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| cis-1,3-Dichloropropene | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 3 | 20 | |
| Dibromochloromethane | 0.0439 | 0.0020 | mg/kg wet | 0.05000 | | 88 | 70-130 | 3 | 20 | |
| Dibromomethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| Dichlorodifluoromethane | 0.0321 | 0.0100 | mg/kg wet | 0.05000 | | 64 | 70-130 | 5 | 20 | B- |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL70426 - 5035** | | | | | | | | | | |
| Diethyl Ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 6 | 20 | |
| Di-isopropyl ether | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 4 | 20 | |
| Ethyl tertiary-butyl ether | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 5 | 20 | |
| Ethylbenzene | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 2 | 20 | |
| Hexachlorobutadiene | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 4 | 20 | |
| Isopropylbenzene | 0.0427 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 6 | 20 | |
| Methyl tert-Butyl Ether | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 6 | 20 | |
| Methylene Chloride | 0.0472 | 0.0100 | mg/kg wet | 0.05000 | | 94 | 70-130 | 2 | 20 | |
| Naphthalene | 0.0402 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | 2 | 20 | |
| n-Butylbenzene | 0.0427 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 5 | 20 | |
| n-Propylbenzene | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 6 | 20 | |
| sec-Butylbenzene | 0.0355 | 0.0050 | mg/kg wet | 0.05000 | | 71 | 70-130 | 4 | 20 | |
| Styrene | 0.0409 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | 1 | 20 | |
| tert-Butylbenzene | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 6 | 20 | |
| Tertiary-amyl methyl ether | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 6 | 20 | |
| Tetrachloroethene | 0.0417 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | 4 | 20 | |
| Tetrahydrofuran | 0.0418 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | 9 | 20 | |
| Toluene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 0.8 | 20 | |
| trans-1,2-Dichloroethene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 0.7 | 20 | |
| trans-1,3-Dichloropropene | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| Trichloroethene | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 0.7 | 20 | |
| Trichlorofluoromethane | 0.0436 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 4 | 20 | |
| Vinyl Chloride | 0.0403 | 0.0100 | mg/kg wet | 0.05000 | | 81 | 70-130 | 5 | 20 | |
| Xylene O | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 0.7 | 20 | |
| Xylene P,M | 0.0879 | 0.0100 | mg/kg wet | 0.1000 | | 88 | 70-130 | 2 | 20 | |
| Xylenes (Total) | 0.133 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0513* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0493* | | mg/kg wet | *0.05000* | | *99* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0516* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0478* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL70414 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL70414 - 3546** | | | | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Chlordane (Total) | ND | 0.0200 | mg/kg wet | | | | | | | |
| Chlordane (Total) [2C] | ND | 0.0200 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0103* | | mg/kg wet | *0.01250* | | *82* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0112* | | mg/kg wet | *0.01250* | | *90* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00867* | | mg/kg wet | *0.01250* | | *69* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.00977* | | mg/kg wet | *0.01250* | | *78* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| 4,4´-DDE | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| 4,4´-DDT | 0.0088 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Aldrin | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Aldrin [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL70414 - 3546** | | | | | | | | | | |
| alpha-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| alpha-BHC [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| alpha-Chlordane | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| beta-BHC | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| beta-BHC [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| delta-BHC | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| delta-BHC [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Dieldrin [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Endosulfan I | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Endosulfan I [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Endosulfan II | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Endosulfan II [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan Sulfate | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Endrin | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Endrin [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| Endrin Ketone | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0093 | 0.0015 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0108 | 0.0015 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| gamma-Chlordane | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| Heptachlor | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| Heptachlor [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | | | |
| Heptachlor Epoxide | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| Hexachlorobenzene | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| Methoxychlor | 0.0087 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | | | |
| Methoxychlor [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0105* | | mg/kg wet | *0.01250* | | *84* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0121* | | mg/kg wet | *0.01250* | | *97* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00907* | | mg/kg wet | *0.01250* | | *73* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0102* | | mg/kg wet | *0.01250* | | *81* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 2 | 30 | |
| 4,4´-DDD [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 1 | 30 | |
| 4,4´-DDE | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | 3 | 30 | |
| 4,4´-DDE [2C] | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 2 | 30 | |
| 4,4´-DDT | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 4 | 30 | |
| 4,4´-DDT [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 2 | 30 | |
| Aldrin | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 2 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL70414 - 3546** | | | | | | | | | | |
| Aldrin [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 0.08 | 30 | |
| alpha-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 0.7 | 30 | |
| alpha-BHC [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 0.01 | 30 | |
| alpha-Chlordane | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | 2 | 30 | |
| alpha-Chlordane [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 3 | 30 | |
| beta-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 1 | 30 | |
| beta-BHC [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 0.02 | 30 | |
| delta-BHC | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | 0.2 | 30 | |
| delta-BHC [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 0.5 | 30 | |
| Dieldrin | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 2 | 30 | |
| Dieldrin [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 3 | 30 | |
| Endosulfan I | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 2 | 30 | |
| Endosulfan I [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 2 | 30 | |
| Endosulfan II | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 1 | 30 | |
| Endosulfan II [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 2 | 30 | |
| Endosulfan Sulfate | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 2 | 30 | |
| Endosulfan Sulfate [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 0.7 | 30 | |
| Endrin | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | 2 | 30 | |
| Endrin [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | 0.4 | 30 | |
| Endrin Ketone | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 1 | 30 | |
| Endrin Ketone [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 2 | 30 | |
| gamma-BHC (Lindane) | 0.0093 | 0.0015 | mg/kg wet | 0.01250 | | 74 | 40-140 | 0.06 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0107 | 0.0015 | mg/kg wet | 0.01250 | | 86 | 40-140 | 0.8 | 30 | |
| gamma-Chlordane | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 2 | 30 | |
| gamma-Chlordane [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 2 | 30 | |
| Heptachlor | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | 2 | 30 | |
| Heptachlor [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 0.2 | 30 | |
| Heptachlor Epoxide | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 1 | 30 | |
| Heptachlor Epoxide [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 0.2 | 30 | |
| Hexachlorobenzene | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 2 | 30 | |
| Hexachlorobenzene [2C] | 0.0121 | 0.0025 | mg/kg wet | 0.01250 | | 97 | 40-140 | 1 | 30 | |
| Methoxychlor | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | 2 | 30 | |
| Methoxychlor [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 3 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0110* | | mg/kg wet | *0.01250* | | *88* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0122* | | mg/kg wet | *0.01250* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00957* | | mg/kg wet | *0.01250* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0106* | | mg/kg wet | *0.01250* | | *85* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL70107 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CL70107 - 3540C** | | | | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0221* | | mg/kg wet | *0.02500* | | *88* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0235* | | mg/kg wet | *0.02500* | | *94* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0186* | | mg/kg wet | *0.02500* | | *74* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0205* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 97 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 99 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 91 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0236* | | mg/kg wet | *0.02500* | | *94* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0245* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0211* | | mg/kg wet | *0.02500* | | *84* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0210* | | mg/kg wet | *0.02500* | | *84* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 99 | 40-140 | 7 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 98 | 40-140 | 2 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | 2 | 30 | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | 2 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0225* | | mg/kg wet | *0.02500* | | *90* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0237* | | mg/kg wet | *0.02500* | | *95* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0210* | | mg/kg wet | *0.02500* | | *84* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0208* | | mg/kg wet | *0.02500* | | *83* | *30-150* | | | |
| **Batch CL70409 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CL70409 - 3540C** | | | | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0232* | | mg/kg wet | *0.02500* | | *93* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0258* | | mg/kg wet | *0.02500* | | *103* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0228* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0268* | | mg/kg wet | *0.02500* | | *107* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 96 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 106 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 98 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 112 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0246* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0257* | | mg/kg wet | *0.02500* | | *103* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0242* | | mg/kg wet | *0.02500* | | *97* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0264* | | mg/kg wet | *0.02500* | | *105* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 94 | 40-140 | 1 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 107 | 40-140 | 0.9 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 96 | 40-140 | 1 | 30 | |
| Aroclor 1260 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 112 | 40-140 | 0.6 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0241* | | mg/kg wet | *0.02500* | | *96* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0250* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0238* | | mg/kg wet | *0.02500* | | *95* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0250* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| **Batch CL70410 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL70410 - 3540C** | | | | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0245* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0253* | | mg/kg wet | *0.02500* | | *101* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0195* | | mg/kg wet | *0.02500* | | *78* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0213* | | mg/kg wet | *0.02500* | | *85* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 94 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 100 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 89 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0239* | | mg/kg wet | *0.02500* | | *96* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0244* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0202* | | mg/kg wet | *0.02500* | | *81* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0202* | | mg/kg wet | *0.02500* | | *81* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | 0.08 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 95 | 40-140 | 1 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 102 | 40-140 | 2 | 30 | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | 2 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0247* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0249* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0206* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0206* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL70139 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL70139 - 3546** | | | | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.155* | | mg/kg wet | *0.2000* | | *78* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.169* | | mg/kg wet | *0.2000* | | *84* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 78 | 40-140 | | | |
| 2,4,5-T [2C] | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 74 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 82 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 84 | 40-140 | | | |
| 2,4-D | 0.126 | 0.047 | mg/kg wet | 0.1880 | | 67 | 40-140 | | | |
| 2,4-D [2C] | 0.142 | 0.047 | mg/kg wet | 0.1880 | | 76 | 40-140 | | | |
| 2,4-DB | 0.146 | 0.048 | mg/kg wet | 0.1900 | | 77 | 40-140 | | | |
| 2,4-DB [2C] | 0.140 | 0.048 | mg/kg wet | 0.1900 | | 74 | 40-140 | | | |
| Dalapon | 0.271 | 0.046 | mg/kg wet | 0.4550 | | 60 | 40-140 | | | |
| Dalapon [2C] | 0.347 | 0.046 | mg/kg wet | 0.4550 | | 76 | 40-140 | | | |
| Dicamba | 0.015 | 0.009 | mg/kg wet | 0.01880 | | 78 | 40-140 | | | |
| Dicamba [2C] | 0.016 | 0.009 | mg/kg wet | 0.01880 | | 84 | 40-140 | | | |
| Dichlorprop | 0.156 | 0.047 | mg/kg wet | 0.1880 | | 83 | 40-140 | | | |
| Dichlorprop [2C] | 0.161 | 0.047 | mg/kg wet | 0.1880 | | 85 | 40-140 | | | |
| Dinoseb | 0.023 | 0.048 | mg/kg wet | 0.09500 | | 24 | 10-100 | | | |
| Dinoseb [2C] | 0.023 | 0.048 | mg/kg wet | 0.09500 | | 24 | 10-100 | | | |
| MCPA | 18.1 | 2.32 | mg/kg wet | 18.60 | | 97 | 40-140 | | | |
| MCPA [2C] | 16.9 | 2.32 | mg/kg wet | 18.60 | | 91 | 40-140 | | | |
| MCPP | 14.4 | 2.35 | mg/kg wet | 18.80 | | 77 | 40-140 | | | |
| MCPP [2C] | 16.1 | 2.35 | mg/kg wet | 18.80 | | 86 | 40-140 | | | |
| *Surrogate: DCAA* | *0.161* | | mg/kg wet | *0.2000* | | *80* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.170* | | mg/kg wet | *0.2000* | | *85* | *30-150* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL70139 - 3546** | | | | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 76 | 40-140 | 3 | 30 | |
| 2,4,5-T [2C] | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 82 | 40-140 | 10 | 30 | |
| 2,4,5-TP (Silvex) | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 86 | 40-140 | 5 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 86 | 40-140 | 2 | 30 | |
| 2,4-D | 0.139 | 0.047 | mg/kg wet | 0.1880 | | 74 | 40-140 | 10 | 30 | |
| 2,4-D [2C] | 0.153 | 0.047 | mg/kg wet | 0.1880 | | 82 | 40-140 | 8 | 30 | |
| 2,4-DB | 0.152 | 0.048 | mg/kg wet | 0.1900 | | 80 | 40-140 | 4 | 30 | |
| 2,4-DB [2C] | 0.155 | 0.048 | mg/kg wet | 0.1900 | | 81 | 40-140 | 10 | 30 | |
| Dalapon | 0.269 | 0.046 | mg/kg wet | 0.4550 | | 59 | 40-140 | 0.7 | 30 | |
| Dalapon [2C] | 0.354 | 0.046 | mg/kg wet | 0.4550 | | 78 | 40-140 | 2 | 30 | |
| Dicamba | 0.016 | 0.009 | mg/kg wet | 0.01880 | | 84 | 40-140 | 7 | 30 | |
| Dicamba [2C] | 0.018 | 0.009 | mg/kg wet | 0.01880 | | 96 | 40-140 | 13 | 30 | |
| Dichlorprop | 0.164 | 0.047 | mg/kg wet | 0.1880 | | 87 | 40-140 | 4 | 30 | |
| Dichlorprop [2C] | 0.171 | 0.047 | mg/kg wet | 0.1880 | | 91 | 40-140 | 6 | 30 | |
| Dinoseb | 0.033 | 0.048 | mg/kg wet | 0.09500 | | 35 | 10-100 | 38 | 30 | D+ |
| Dinoseb [2C] | 0.035 | 0.048 | mg/kg wet | 0.09500 | | 37 | 10-100 | 41 | 30 | D+ |
| MCPA | 18.4 | 2.32 | mg/kg wet | 18.60 | | 99 | 40-140 | 2 | 30 | |
| MCPA [2C] | 16.2 | 2.32 | mg/kg wet | 18.60 | | 87 | 40-140 | 4 | 30 | |
| MCPP | 15.5 | 2.35 | mg/kg wet | 18.80 | | 83 | 40-140 | 8 | 30 | |
| MCPP [2C] | 17.2 | 2.35 | mg/kg wet | 18.80 | | 92 | 40-140 | 6 | 30 | |
| *Surrogate: DCAA* | *0.166* | | mg/kg wet | *0.2000* | | *83* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.188* | | mg/kg wet | *0.2000* | | *94* | *30-150* | | | |
| **Batch CL70530 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL70530 - 3546** | | | | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.135* | | mg/kg wet | *0.2000* | | *68* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.150* | | mg/kg wet | *0.2000* | | *75* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 68 | 40-140 | | | |
| 2,4,5-T [2C] | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 66 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 72 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 74 | 40-140 | | | |
| 2,4-D | 0.121 | 0.047 | mg/kg wet | 0.1880 | | 64 | 40-140 | | | |
| 2,4-D [2C] | 0.133 | 0.047 | mg/kg wet | 0.1880 | | 71 | 40-140 | | | |
| 2,4-DB | 0.133 | 0.048 | mg/kg wet | 0.1900 | | 70 | 40-140 | | | |
| 2,4-DB [2C] | 0.138 | 0.048 | mg/kg wet | 0.1900 | | 73 | 40-140 | | | |
| Dalapon | 0.207 | 0.046 | mg/kg wet | 0.4550 | | 45 | 40-140 | | | |
| Dalapon [2C] | 0.251 | 0.046 | mg/kg wet | 0.4550 | | 55 | 40-140 | | | |
| Dicamba | 0.012 | 0.009 | mg/kg wet | 0.01880 | | 64 | 40-140 | | | |
| Dicamba [2C] | 0.014 | 0.009 | mg/kg wet | 0.01880 | | 74 | 40-140 | | | |
| Dichlorprop | 0.138 | 0.047 | mg/kg wet | 0.1880 | | 73 | 40-140 | | | |
| Dichlorprop [2C] | 0.141 | 0.047 | mg/kg wet | 0.1880 | | 75 | 40-140 | | | |
| Dinoseb | 0.016 | 0.048 | mg/kg wet | 0.09500 | | 17 | 10-100 | | | |
| Dinoseb [2C] | 0.016 | 0.048 | mg/kg wet | 0.09500 | | 17 | 10-100 | | | |
| MCPA | 13.6 | 2.32 | mg/kg wet | 18.60 | | 73 | 40-140 | | | |
| MCPA [2C] | 13.6 | 2.32 | mg/kg wet | 18.60 | | 73 | 40-140 | | | |
| MCPP | 12.3 | 2.35 | mg/kg wet | 18.80 | | 66 | 40-140 | | | |
| MCPP [2C] | 13.6 | 2.35 | mg/kg wet | 18.80 | | 72 | 40-140 | | | |
| *Surrogate: DCAA* | *0.154* | | mg/kg wet | *0.2000* | | *77* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.151* | | mg/kg wet | *0.2000* | | *75* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 66 | 40-140 | 3 | 30 | |
| 2,4,5-T [2C] | 0.011 | 0.010 | mg/kg wet | 0.01900 | | 60 | 40-140 | 10 | 30 | |
| 2,4,5-TP (Silvex) | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 76 | 40-140 | 5 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 66 | 40-140 | 11 | 30 | |
| 2,4-D | 0.111 | 0.047 | mg/kg wet | 0.1880 | | 59 | 40-140 | 8 | 30 | |
| 2,4-D [2C] | 0.123 | 0.047 | mg/kg wet | 0.1880 | | 65 | 40-140 | 8 | 30 | |
| 2,4-DB | 0.133 | 0.048 | mg/kg wet | 0.1900 | | 70 | 40-140 | 0 | 30 | |
| 2,4-DB [2C] | 0.128 | 0.048 | mg/kg wet | 0.1900 | | 67 | 40-140 | 8 | 30 | |
| Dalapon | 0.217 | 0.046 | mg/kg wet | 0.4550 | | 48 | 40-140 | 5 | 30 | |
| Dalapon [2C] | 0.379 | 0.046 | mg/kg wet | 0.4550 | | 83 | 40-140 | 41 | 30 | D+ |
| Dicamba | 0.012 | 0.009 | mg/kg wet | 0.01880 | | 62 | 40-140 | 3 | 30 | |
| Dicamba [2C] | 0.013 | 0.009 | mg/kg wet | 0.01880 | | 68 | 40-140 | 8 | 30 | |
| Dichlorprop | 0.134 | 0.047 | mg/kg wet | 0.1880 | | 71 | 40-140 | 3 | 30 | |
| Dichlorprop [2C] | 0.126 | 0.047 | mg/kg wet | 0.1880 | | 67 | 40-140 | 11 | 30 | |
| Dinoseb | 0.014 | 0.048 | mg/kg wet | 0.09500 | | 15 | 10-100 | 13 | 30 | |
| Dinoseb [2C] | 0.015 | 0.048 | mg/kg wet | 0.09500 | | 16 | 10-100 | 5 | 30 | |
| MCPA | 12.2 | 2.32 | mg/kg wet | 18.60 | | 66 | 40-140 | 11 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL70530 - 3546** | | | | | | | | | | |
| MCPA [2C] | 12.4 | 2.32 | mg/kg wet | 18.60 | | 67 | 40-140 | 9 | 30 | |
| MCPP | 11.3 | 2.35 | mg/kg wet | 18.80 | | 60 | 40-140 | 9 | 30 | |
| MCPP [2C] | 12.5 | 2.35 | mg/kg wet | 18.80 | | 66 | 40-140 | 9 | 30 | |
| *Surrogate: DCAA* | *0.139* | | mg/kg wet | *0.2000* | | *70* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.146* | | mg/kg wet | *0.2000* | | *73* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70110 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.167 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.090 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.167 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.090 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.167 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.100 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.167 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.167 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.167 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.090 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.090 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70110 - 3546** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.083 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.083 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.090 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 0.667 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.14* | | mg/kg wet | *3.333* | | *94* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.36* | | mg/kg wet | *5.000* | | *127* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *5.03* | | mg/kg wet | *5.000* | | *101* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.51* | | mg/kg wet | *3.333* | | *105* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.06* | | mg/kg wet | *5.000* | | *101* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.48* | | mg/kg wet | *3.333* | | *104* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.20* | | mg/kg wet | *5.000* | | *104* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.86* | | mg/kg wet | *3.333* | | *116* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.34 | 0.333 | mg/kg wet | 3.333 | | 100 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 3.28 | 0.333 | mg/kg wet | 3.333 | | 98 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.93 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.96 | 0.333 | mg/kg wet | 3.333 | | 89 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.35 | 1.67 | mg/kg wet | 3.333 | | 71 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| 2-Chloronaphthalene | 2.75 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| 2-Chlorophenol | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 30-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70110 - 3546** | | | | | | | | | | |
| 2-Methylnaphthalene | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 2-Methylphenol | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 30-130 | | | |
| 2-Nitrophenol | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.22 | 0.667 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| 3+4-Methylphenol | 5.60 | 0.667 | mg/kg wet | 6.667 | | 84 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| 4-Chloroaniline | 2.01 | 0.667 | mg/kg wet | 3.333 | | 60 | 40-140 | | | |
| 4-Nitrophenol | 2.47 | 1.67 | mg/kg wet | 3.333 | | 74 | 30-130 | | | |
| Acenaphthene | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Acenaphthylene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Acetophenone | 2.76 | 0.667 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Aniline | 2.41 | 1.67 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| Anthracene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Azobenzene | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Benzo(a)anthracene | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Benzo(a)pyrene | 2.90 | 0.167 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.12 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Butylbenzylphthalate | 2.88 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Chrysene | 2.87 | 0.167 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.19 | 0.167 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |
| Dibenzofuran | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Diethylphthalate | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Dimethylphthalate | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Di-n-butylphthalate | 3.05 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Di-n-octylphthalate | 2.77 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Fluoranthene | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Fluorene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Hexachlorobenzene | 3.19 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |
| Hexachlorobutadiene | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Hexachloroethane | 3.91 | 0.333 | mg/kg wet | 3.333 | | 117 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.15 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Isophorone | 2.61 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| Naphthalene | 2.85 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Nitrobenzene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| N-Nitrosodimethylamine | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Pentachlorophenol | 2.93 | 1.67 | mg/kg wet | 3.333 | | 88 | 30-130 | | | |
| Phenanthrene | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Phenol | 2.75 | 0.333 | mg/kg wet | 3.333 | | 82 | 30-130 | | | |
| Pyrene | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70110 - 3546** | | | | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.99* | | mg/kg wet | *3.333* | | *90* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.34* | | mg/kg wet | *5.000* | | *127* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *4.98* | | mg/kg wet | *5.000* | | *100* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.54* | | mg/kg wet | *3.333* | | *106* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.04* | | mg/kg wet | *5.000* | | *101* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.53* | | mg/kg wet | *3.333* | | *106* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.16* | | mg/kg wet | *5.000* | | *103* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.56* | | mg/kg wet | *3.333* | | *107* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 4 | 30 | |
| 1,2-Dichlorobenzene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 8 | 30 | |
| 1,3-Dichlorobenzene | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 7 | 30 | |
| 1,4-Dichlorobenzene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 7 | 30 | |
| 2,4,5-Trichlorophenol | 3.40 | 0.333 | mg/kg wet | 3.333 | | 102 | 30-130 | 2 | 30 | |
| 2,4,6-Trichlorophenol | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 30-130 | 0.6 | 30 | |
| 2,4-Dichlorophenol | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | 0.4 | 30 | |
| 2,4-Dimethylphenol | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 30-130 | 0.4 | 30 | |
| 2,4-Dinitrophenol | 2.70 | 1.67 | mg/kg wet | 3.333 | | 81 | 30-130 | 14 | 30 | |
| 2,4-Dinitrotoluene | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 10 | 30 | |
| 2,6-Dinitrotoluene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 7 | 30 | |
| 2-Chloronaphthalene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 4 | 30 | |
| 2-Chlorophenol | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 30-130 | 0.6 | 30 | |
| 2-Methylnaphthalene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 4 | 30 | |
| 2-Methylphenol | 2.62 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | 3 | 30 | |
| 2-Nitrophenol | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 30-130 | 3 | 30 | |
| 3,3´-Dichlorobenzidine | 2.34 | 0.667 | mg/kg wet | 3.333 | | 70 | 40-140 | 5 | 30 | |
| 3+4-Methylphenol | 5.40 | 0.667 | mg/kg wet | 6.667 | | 81 | 30-130 | 4 | 30 | |
| 4-Bromophenyl-phenylether | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 6 | 30 | |
| 4-Chloroaniline | 2.00 | 0.667 | mg/kg wet | 3.333 | | 60 | 40-140 | 0.3 | 30 | |
| 4-Nitrophenol | 2.81 | 1.67 | mg/kg wet | 3.333 | | 84 | 30-130 | 13 | 30 | |
| Acenaphthene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 4 | 30 | |
| Acenaphthylene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 4 | 30 | |
| Acetophenone | 2.76 | 0.667 | mg/kg wet | 3.333 | | 83 | 40-140 | 0.2 | 30 | |
| Aniline | 2.26 | 1.67 | mg/kg wet | 3.333 | | 68 | 40-140 | 7 | 30 | |
| Anthracene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 4 | 30 | |
| Azobenzene | 2.98 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 4 | 30 | |
| Benzo(a)anthracene | 3.05 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 5 | 30 | |
| Benzo(a)pyrene | 3.07 | 0.167 | mg/kg wet | 3.333 | | 92 | 40-140 | 6 | 30 | |
| Benzo(b)fluoranthene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 11 | 30 | |
| Benzo(g,h,i)perylene | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 3 | 30 | |
| Benzo(k)fluoranthene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 0.5 | 30 | |
| bis(2-Chloroethoxy)methane | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 3 | 30 | |
| bis(2-Chloroethyl)ether | 3.14 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 3 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 3 | 30 | |
| bis(2-Ethylhexyl)phthalate | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 1 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL70110 - 3546** | | | | | | | | | | |
| Butylbenzylphthalate | 2.92 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 1 | 30 | |
| Chrysene | 2.99 | 0.167 | mg/kg wet | 3.333 | | 90 | 40-140 | 4 | 30 | |
| Dibenzo(a,h)Anthracene | 3.27 | 0.167 | mg/kg wet | 3.333 | | 98 | 40-140 | 2 | 30 | |
| Dibenzofuran | 2.96 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 4 | 30 | |
| Diethylphthalate | 3.02 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 6 | 30 | |
| Dimethylphthalate | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 4 | 30 | |
| Di-n-butylphthalate | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 6 | 30 | |
| Di-n-octylphthalate | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 11 | 30 | |
| Fluoranthene | 3.37 | 0.333 | mg/kg wet | 3.333 | | 101 | 40-140 | 15 | 30 | |
| Fluorene | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 6 | 30 | |
| Hexachlorobenzene | 3.12 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 2 | 30 | |
| Hexachlorobutadiene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 7 | 30 | |
| Hexachloroethane | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 33 | 30 | D+ |
| Indeno(1,2,3-cd)Pyrene | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 3 | 30 | |
| Isophorone | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 3 | 30 | |
| Naphthalene | 2.98 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 5 | 30 | |
| Nitrobenzene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 6 | 30 | |
| N-Nitrosodimethylamine | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 8 | 30 | |
| Pentachlorophenol | 2.87 | 1.67 | mg/kg wet | 3.333 | | 86 | 30-130 | 2 | 30 | |
| Phenanthrene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 4 | 30 | |
| Phenol | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 30-130 | 0.9 | 30 | |
| Pyrene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 6 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.11* | | mg/kg wet | *3.333* | | *93* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.05* | | mg/kg wet | *5.000* | | *121* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *4.92* | | mg/kg wet | *5.000* | | *98* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.52* | | mg/kg wet | *3.333* | | *106* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *4.96* | | mg/kg wet | *5.000* | | *99* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.59* | | mg/kg wet | *3.333* | | *108* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *4.89* | | mg/kg wet | *5.000* | | *98* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.25* | | mg/kg wet | *3.333* | | *98* | *30-130* | | | |
| **Batch CL70412 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL70412 - 3546** | | | | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70412 - 3546** | | | | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.07* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.71* | | mg/kg wet | *5.000* | | *114* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *5.08* | | mg/kg wet | *5.000* | | *102* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.32* | | mg/kg wet | *3.333* | | *99* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.12* | | mg/kg wet | *5.000* | | *102* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.45* | | mg/kg wet | *3.333* | | *103* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.30* | | mg/kg wet | *5.000* | | *106* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.33* | | mg/kg wet | *3.333* | | *100* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.75 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.47 | 0.333 | mg/kg wet | 3.333 | | 104 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 3.28 | 0.333 | mg/kg wet | 3.333 | | 98 | 30-130 | | | |
| 2,4-Dichlorophenol | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 30-130 | | | |
| 2,4-Dimethylphenol | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.68 | 1.67 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| 2,4-Dinitrotoluene | 3.32 | 0.333 | mg/kg wet | 3.333 | | 100 | 40-140 | | | |
| 2,6-Dinitrotoluene | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| 2-Chloronaphthalene | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 2-Chlorophenol | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 30-130 | | | |
| 2-Methylnaphthalene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| 2-Methylphenol | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 30-130 | | | |
| 2-Nitrophenol | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.94 | 0.667 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| 3+4-Methylphenol | 6.30 | 0.667 | mg/kg wet | 6.667 | | 95 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| 4-Chloroaniline | 2.79 | 0.667 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| 4-Nitrophenol | 2.61 | 1.67 | mg/kg wet | 3.333 | | 78 | 30-130 | | | |
| Acenaphthene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Acenaphthylene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Acetophenone | 3.03 | 0.667 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Aniline | 3.02 | 1.67 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Anthracene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Azobenzene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Benzo(a)anthracene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Benzo(a)pyrene | 3.06 | 0.167 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Benzo(b)fluoranthene | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.02 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.14 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL70412 - 3546** | | | | | | | | | | |
| Butylbenzylphthalate | 3.14 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Chrysene | 2.96 | 0.167 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.09 | 0.167 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Dibenzofuran | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Diethylphthalate | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Dimethylphthalate | 3.15 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Di-n-butylphthalate | 3.23 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Di-n-octylphthalate | 3.30 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | | | |
| Fluoranthene | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Fluorene | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Hexachlorobenzene | 3.19 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |
| Hexachlorobutadiene | 2.75 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Hexachloroethane | 2.61 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Isophorone | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Naphthalene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Nitrobenzene | 2.96 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| N-Nitrosodimethylamine | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Pentachlorophenol | 3.13 | 1.67 | mg/kg wet | 3.333 | | 94 | 30-130 | | | |
| Phenanthrene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Phenol | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| Pyrene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.00* | | mg/kg wet | *3.333* | | *90* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.20* | | mg/kg wet | *5.000* | | *124* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *5.20* | | mg/kg wet | *5.000* | | *104* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.33* | | mg/kg wet | *3.333* | | *100* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.11* | | mg/kg wet | *5.000* | | *102* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.41* | | mg/kg wet | *3.333* | | *102* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.47* | | mg/kg wet | *5.000* | | *109* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.84* | | mg/kg wet | *3.333* | | *115* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.96 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 3 | 30 | |
| 1,2-Dichlorobenzene | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 2 | 30 | |
| 1,3-Dichlorobenzene | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 0.7 | 30 | |
| 1,4-Dichlorobenzene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 0.7 | 30 | |
| 2,4,5-Trichlorophenol | 3.46 | 0.333 | mg/kg wet | 3.333 | | 104 | 30-130 | 0.3 | 30 | |
| 2,4,6-Trichlorophenol | 3.31 | 0.333 | mg/kg wet | 3.333 | | 99 | 30-130 | 0.8 | 30 | |
| 2,4-Dichlorophenol | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 30-130 | 4 | 30 | |
| 2,4-Dimethylphenol | 3.15 | 0.333 | mg/kg wet | 3.333 | | 94 | 30-130 | 3 | 30 | |
| 2,4-Dinitrophenol | 2.70 | 1.67 | mg/kg wet | 3.333 | | 81 | 30-130 | 0.7 | 30 | |
| 2,4-Dinitrotoluene | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 2 | 30 | |
| 2,6-Dinitrotoluene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 0.7 | 30 | |
| 2-Chloronaphthalene | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 2 | 30 | |
| 2-Chlorophenol | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 30-130 | 2 | 30 | |
| 2-Methylnaphthalene | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 3 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70412 - 3546** | | | | | | | | | | |
| 2-Methylphenol | 3.02 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | 0.9 | 30 | |
| 2-Nitrophenol | 3.19 | 0.333 | mg/kg wet | 3.333 | | 96 | 30-130 | 5 | 30 | |
| 3,3´-Dichlorobenzidine | 2.80 | 0.667 | mg/kg wet | 3.333 | | 84 | 40-140 | 5 | 30 | |
| 3+4-Methylphenol | 6.31 | 0.667 | mg/kg wet | 6.667 | | 95 | 30-130 | 0.2 | 30 | |
| 4-Bromophenyl-phenylether | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.9 | 30 | |
| 4-Chloroaniline | 2.95 | 0.667 | mg/kg wet | 3.333 | | 89 | 40-140 | 6 | 30 | |
| 4-Nitrophenol | 2.52 | 1.67 | mg/kg wet | 3.333 | | 76 | 30-130 | 4 | 30 | |
| Acenaphthene | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 2 | 30 | |
| Acenaphthylene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 1 | 30 | |
| Acetophenone | 3.05 | 0.667 | mg/kg wet | 3.333 | | 91 | 40-140 | 0.8 | 30 | |
| Aniline | 2.99 | 1.67 | mg/kg wet | 3.333 | | 90 | 40-140 | 1 | 30 | |
| Anthracene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.7 | 30 | |
| Azobenzene | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 3 | 30 | |
| Benzo(a)anthracene | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 0.4 | 30 | |
| Benzo(a)pyrene | 3.07 | 0.167 | mg/kg wet | 3.333 | | 92 | 40-140 | 0.3 | 30 | |
| Benzo(b)fluoranthene | 3.14 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 1 | 30 | |
| Benzo(g,h,i)perylene | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 0.3 | 30 | |
| Benzo(k)fluoranthene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 4 | 30 | |
| bis(2-Chloroethoxy)methane | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 3 | 30 | |
| bis(2-Chloroethyl)ether | 3.25 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 0.4 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 2 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 0.4 | 30 | |
| Butylbenzylphthalate | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 2 | 30 | |
| Chrysene | 2.97 | 0.167 | mg/kg wet | 3.333 | | 89 | 40-140 | 0.2 | 30 | |
| Dibenzo(a,h)Anthracene | 3.12 | 0.167 | mg/kg wet | 3.333 | | 94 | 40-140 | 0.8 | 30 | |
| Dibenzofuran | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.9 | 30 | |
| Diethylphthalate | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 2 | 30 | |
| Dimethylphthalate | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 2 | 30 | |
| Di-n-butylphthalate | 3.25 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 0.6 | 30 | |
| Di-n-octylphthalate | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 3 | 30 | |
| Fluoranthene | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 4 | 30 | |
| Fluorene | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 0.01 | 30 | |
| Hexachlorobenzene | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 0.5 | 30 | |
| Hexachlorobutadiene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 4 | 30 | |
| Hexachloroethane | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 0.7 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 1 | 30 | |
| Isophorone | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 2 | 30 | |
| Naphthalene | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 4 | 30 | |
| Nitrobenzene | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 3 | 30 | |
| N-Nitrosodimethylamine | 2.18 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 1 | 30 | |
| Pentachlorophenol | 3.14 | 1.67 | mg/kg wet | 3.333 | | 94 | 30-130 | 0.4 | 30 | |
| Phenanthrene | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.6 | 30 | |
| Phenol | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | 0.01 | 30 | |
| Pyrene | 3.02 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 3 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *3.07* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL70412 - 3546** | | | | | | | | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *6.19* | | mg/kg wet | *5.000* | | *124* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *5.24* | | mg/kg wet | *5.000* | | *105* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *3.44* | | mg/kg wet | *3.333* | | *103* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *5.22* | | mg/kg wet | *5.000* | | *104* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *3.54* | | mg/kg wet | *3.333* | | *106* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *5.56* | | mg/kg wet | *5.000* | | *111* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.72* | | mg/kg wet | *3.333* | | *112* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL70541 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 200 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 11500 | 200 | mg/kg | 10000 | | 115 | 80-120 | | | |
| Total Organic Carbon (2) | 11600 | 200 | mg/kg | 10000 | | 116 | 80-120 | | | |
| Total Organic Carbon (Average) | 11600 | 200 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 11300 | 200 | mg/kg | 10000 | | 113 | 80-120 | 2 | 200 | |
| Total Organic Carbon (2) | 11500 | 200 | mg/kg | 10000 | | 115 | 80-120 | 0.8 | 200 | |
| Total Organic Carbon (Average) | 11400 | 200 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.60 | | mg/kg dry wt | | | | | | | |
| **Batch CL70737 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 200 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 200 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 11300 | 200 | mg/kg | 10000 | | 113 | 80-120 | | | |
| Total Organic Carbon (2) | 11300 | 200 | mg/kg | 10000 | | 113 | 80-120 | | | |
| Total Organic Carbon (Average) | 11300 | 200 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 11400 | 200 | mg/kg | 10000 | | 114 | 80-120 | 1 | 200 | |
| Total Organic Carbon (2) | 11400 | 200 | mg/kg | 10000 | | 114 | 80-120 | 0.5 | 200 | |
| Total Organic Carbon (Average) | 11400 | 200 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.70 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1711796

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| Z-08 | See Attached |
| XH | Peaks found in the retention time window for MCPP did not confirm by GC/MS. |
| X* | RSD >25% between replicate analysis, samples non-homogeneous. |
| U | Analyte included in the analysis, but not detected |
| S+ | Surrogate recovery(ies) above upper control limit (S+). |
| S- | Surrogate recovery(ies) below lower control limit (S-). |
| RRF | Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| B- | Blank Spike recovery is below lower control limit (B-). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1711796

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

## Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

# REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

**Report Prepared Date:**

December 18, 2017

## Report Information:

**Pace Project #: 10412990**
**Sample Receipt Date: 12/02/2017**
**Client Project #: 1711796**
**Client Sub PO #: B02407**
**State Cert #: N/A**

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Joanne Richardson

December 18, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

## Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## DISCUSSION

This report presents the results from the analyses performed on ten samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report. This report was revised to provide results from the re-extraction and re-analysis of sample 1711796-09.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 35-94%. Except for two low values, which were flagged "R" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batches using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 79-121% with relative percent differences of 0.1-12.2%. These results were within the target ranges for the method.



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Minnesota Laboratory Certifications

| Authority | Certificate # | Authority | Certificate # |
|---|---|---|---|
| A2LA | 2926.01 | Mississippi | MN00064 |
| Alabama | 40770 | Montana | CERT0092 |
| Alaska | MN00064 | Nebraska | NE-OS-18-06 |
| Alaska | UST-078 | Nevada | MN00064 |
| Arizona | AZ0014 | New Jersey (NE | MN002 |
| Arkansas | 88-0680 | New York (NEL | 11647 |
| CNMI Saipan | MP0003 | New hampshire | 2081 |
| California | MN00064 | North Carolina | 27700 |
| Colorado | MN00064 | North Carolina | 530 |
| Connecticut | PH-0256 | North Dakota | R-036 |
| EPA Region 8 | 8TMS-L | Ohio | 41244 |
| Florida (NELAP | E87605 | Ohio VAP | CL101 |
| Georgia (EDP) | 959 | Oklahoma | 9507 |
| Guam EPA | 959 | Oregon (ELAP) | MN200001 |
| Hawaii | MN00064 | Oregon (OREL | MN300001 |
| Idaho | MN00064 | Pennsylvania | 68-00563 |
| Illinois | 200011 | Puerto Rico | MN00064 |
| Indiana | C-MN-01 | South Carolina | 74003001 |
| Iowa | 368 | Tennessee | TN02818 |
| Kansas | E-10167 | Texas | T104704192 |
| Kentucky | 90062 | Utah (NELAP) | MN00064 |
| Louisiana | 03086 | Virginia | 460163 |
| Louisiana | MN00064 | Washington | C486 |
| Maine | MN00064 | West Virginia # | 9952C |
| Maryland | 322 | West Virginia D | 382 |
| Michigan | 9909 | Wisconsin | 999407970 |
| Minnesota | 027-053-137 | Wyoming | 8TMS-L |

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Report No.....10412990

# Appendix A

Sample Management

10412990

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1711796

Turn Time Standard Other **DUE 12/9/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables ***Excel** Access ***PDF**

| | | | |
|---|---|---|---|
| Co. Name: **ESS Laboratory** | Project #: | Project Name: **1711796** | |
| Contact Person: **Shawn Morrell** | Proj. Location: | | |
| Address: **ext 3083** | City , State: | Zip: | PO #: B02407 |
| Tel. | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11/30/17 | 1345 | G | S | 1711796-01 | 1 | 1 | AG | 001 | X |
| | 11/30/17 | 1348 | G | S | 1711796-02 | 1 | 1 | AG | 002 | X |
| | 11/30/17 | 1351 | G | S | 1711796-03 | 1 | 1 | AG | 003 | X |
| | 11/30/17 | 1354 | G | S | 1711796-04 | 1 | 1 | AG | 004 | X |
| | 11/30/17 | 1357 | G | S | 1711796-05 | 1 | 1 | AG | 005 | X |
| | 11/30/17 | 1410 | G | S | 1711796-06 | 1 | 1 | AG | 006 | X |
| | 11/30/17 | 1413 | G | S | 1711796-07 | 1 | 1 | AG | 007 | X |
| | 11/30/17 | 1417 | G | S | 1711796-08 | 1 | 1 | AG | 008 | X |
| | 11/30/17 | 1400 | G | S | 1711796-09 | 1 | 1 | AG | 009 | X |
| | 11/30/17 | 1405 | G | S | 1711796-10 | 1 | 1 | AG | 010 | X |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 12/1/17 1551 | UPS | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | Fax Express 12/2/17 10:25 | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

Temp = 4.9

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 30Aug2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.21** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS Laboratory

**Project #:** WO#:10412990

10412990

**Courier:** ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 12037 497 44 4681 5576

**Custody Seal on Cooler/Box Present?** ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☒ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

**Thermometer Used:** ☐ 151401163 ☒ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

**Cooler Temp Read (°C):** 4.8 **Cooler Temp Corrected (°C):** 4.9 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 12/2/17 - JDD

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | | | COMMENTS: |
|---|---|---|---|---|
| Chain of Custody Present? | ☑ Yes | ☐ No | | 1. |
| Chain of Custody Filled Out? | ☑ Yes | ☐ No | | 2. |
| Chain of Custody Relinquished? | ☑ Yes | ☐ No | | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes | ☐ No | ☑ N/A | 4. |
| Samples Arrived within Hold Time? | ☑ Yes | ☐ No | | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes | ☑ No | | 6. |
| **Rush Turn Around Time Requested?** | ☐ Yes | ☑ No | | 7. |
| Sufficient Volume? | ☑ Yes | ☐ No | | 8. |
| Correct Containers Used? | ☑ Yes | ☐ No | | 9. |
| -Pace Containers Used? | ☑ Yes | ☐ No | | |
| Containers Intact? | ☑ Yes | ☐ No | | 10. |
| Filtered Volume Received for Dissolved Tests? | ☑ Yes | ☐ No | ☐ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☑ Yes | ☐ No | | 12. |
| All containers needing acid/base preservation have been checked? | ☐ Yes | ☐ No | ☑ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N Sample # |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes | ☐ No | ☑ N/A | |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes | ☐ No | ☑ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes | ☐ No | ☑ N/A | 14. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☑ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☑ N/A | |
| Pace Trip Blank Lot # (if purchased): | | | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

**Project Manager Review:** Joanne Richardson **Date:** 12-4-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix B

Sample Analysis  Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1711796-01 | | |
| Lab Sample ID | 10412990001 | | |
| Filename | U171209A_06 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid |
| % Moisture | 3.4 | Dilution | NA |
| Dry Weight Extracted | 10.4 g | Collected | 11/30/2017 13:45 |
| ICAL ID | U171107 | Received | 12/02/2017 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 15:49 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 56 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 53 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 53 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 59 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 57 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 61 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 48 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 53 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 54 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 50 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 47 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 53 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 39 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 55 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-02 | | | |
| Lab Sample ID | 10412990002 | | | |
| Filename | U171209A_07 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.9 g | Matrix | Solid | |
| % Moisture | 3.4 | Dilution | NA | |
| Dry Weight Extracted | 11.5 g | Collected | 11/30/2017 | 13:48 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 16:34 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 66 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 65 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 64 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 63 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 65 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 69 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 69 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 58 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 54 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 49 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 65 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-03 | | | |
| Lab Sample ID | 10412990003 | | | |
| Filename | U171209A_08 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid | |
| % Moisture | 3.3 | Dilution | NA | |
| Dry Weight Extracted | 10.4 g | Collected | 11/30/2017 | 13:51 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 17:18 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 51 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 54 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 73 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 72 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 72 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 66 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 50 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 47 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 50 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-04 | | | |
| Lab Sample ID | 10412990004 | | | |
| Filename | U171209A_09 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid | |
| % Moisture | 3.1 | Dilution | NA | |
| Dry Weight Extracted | 10.5 g | Collected | 11/30/2017 | 13:54 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 18:03 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 73 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 72 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 71 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 70 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 74 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 79 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 77 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 79 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 68 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 75 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 67 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 56 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 68 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 50 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 74 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-05 | | | |
| Lab Sample ID | 10412990005 | | | |
| Filename | U171209A_10 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.3 g | Matrix | Solid | |
| % Moisture | 3.9 | Dilution | NA | |
| Dry Weight Extracted | 10.9 g | Collected | 11/30/2017 | 13:57 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 18:48 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 61 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 57 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 59 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 60 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 71 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 69 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 66 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 60 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 47 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 58 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 44 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-06 | | | |
| Lab Sample ID | 10412990006 | | | |
| Filename | U171209A_11 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.9 g | Matrix | Solid | |
| % Moisture | 17.5 | Dilution | NA | |
| Dry Weight Extracted | 8.99 g | Collected | 11/30/2017 | 14:10 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 19:33 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 66 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 58 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 63 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 91 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 94 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 90 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 84 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 85 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 71 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 69 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 44 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-07 | | | |
| Lab Sample ID | 10412990007 | | | |
| Filename | U171209A_12 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.6 g | Matrix | Solid | |
| % Moisture | 14.7 | Dilution | NA | |
| Dry Weight Extracted | 9.04 g | Collected | 11/30/2017 | 14:13 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 20:18 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 62 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 60 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 60 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 59 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 64 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 65 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 59 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 53 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 44 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 44 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 57 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-08 | | | |
| Lab Sample ID | 10412990008 | | | |
| Filename | U171209A_13 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid | |
| % Moisture | 14.0 | Dilution | NA | |
| Dry Weight Extracted | 9.29 g | Collected | 11/30/2017 | 14:17 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 21:02 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 70 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 70 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 71 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 69 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 71 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 75 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 74 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 76 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 70 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 74 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 65 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 57 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 66 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 48 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 72 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-09 | | | |
| Lab Sample ID | 10412990009-R | | | |
| Filename | U171216B_09 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.0 g | Matrix | Solid | |
| % Moisture | 15.6 | Dilution | NA | |
| Dry Weight Extracted | 10.1 g | Collected | 11/30/2017 | 14:00 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/16/2017 | 20:00 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 56 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 53 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 76 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 75 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 70 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 47 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 35 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1711796-10 | | | |
| Lab Sample ID | 10412990010 | | | |
| Filename | U171209A_15 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.0 g | Matrix | Solid | |
| % Moisture | 14.6 | Dilution | NA | |
| Dry Weight Extracted | 9.39 g | Collected | 11/30/2017 | 14:05 |
| ICAL ID | U171107 | Received | 12/02/2017 | 09:00 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Extracted | 12/04/2017 | 14:40 |
| Method Blank ID | BLANK-58998 | Analyzed | 12/09/2017 | 22:31 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 64 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 57 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 58 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 87 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 90 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 78 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 78 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 70 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 53 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 70 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 46 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 55 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-58998 | Matrix | Solid |
| Filename | U171208A_08 | Dilution | NA |
| Total Amount Extracted | 11.0 g | Extracted | 12/04/2017 14:40 |
| ICAL ID | U171107 | Analyzed | 12/08/2017 15:54 |
| CCal Filename(s) | U171208A_01 & U171208A_17 | Injected By | ZMS |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 66 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 65 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 68 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 66 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 68 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 69 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 68 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 61 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 62 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 71 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 53 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 66 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-59101 | Matrix | Solid |
| Filename | U171216B_07 | Dilution | NA |
| Total Amount Extracted | 10.0 g | Extracted | 12/13/2017 14:50 |
| ICAL ID | U171107 | Analyzed | 12/16/2017 18:33 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Injected By | BAL |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 53 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 54 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 72 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 41 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-58999 | | |
| Filename | Y171207A_10 | Matrix | Solid |
| Total Amount Extracted | 10.4 g | Dilution | NA |
| ICAL ID | Y171107 | Extracted | 12/04/2017 14:40 |
| CCal Filename(s) | Y171207A_05 & Y171207A_19 | Analyzed | 12/07/2017 20:38 |
| Method Blank ID | BLANK-58998 | Injected By | |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 89 | 2,3,7,8-TCDF-13C | 2.0 | 72 |
| Total TCDF | | | | 2,3,7,8-TCDD-13C | 2.0 | 63 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.0 | 76 |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 96 | 2,3,4,7,8-PeCDF-13C | 2.0 | 82 |
| Total TCDD | | | | 1,2,3,7,8-PeCDD-13C | 2.0 | 84 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.0 | 76 |
| 1,2,3,7,8-PeCDF | 1.0 | 0.93 | 93 | 1,2,3,6,7,8-HxCDF-13C | 2.0 | 70 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.81 | 81 | 2,3,4,6,7,8-HxCDF-13C | 2.0 | 79 |
| Total PeCDF | | | | 1,2,3,7,8,9-HxCDF-13C | 2.0 | 72 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.0 | 72 |
| 1,2,3,7,8-PeCDD | 1.0 | 0.85 | 85 | 1,2,3,6,7,8-HxCDD-13C | 2.0 | 57 |
| Total PeCDD | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 57 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 60 |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.91 | 91 | 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 62 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.86 | 86 | OCDD-13C | 4.0 | 62 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.79 | 79 | | | |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.85 | 85 | 1,2,3,4-TCDD-13C | 2.0 | NA |
| Total HxCDF | | | | 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 1,2,3,4,7,8-HxCDD | 1.0 | 0.91 | 91 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 67 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.93 | 93 | | | |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.86 | 86 | | | |
| Total HxCDD | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.87 | 87 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.86 | 86 | | | |
| Total HpCDF | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.79 | 79 | | | |
| Total HpCDD | | | | | | |
| OCDF | 2.0 | 1.8 | 90 | | | |
| OCDD | 2.0 | 1.8 | 89 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-59102 | | |
| Filename | U171216B_06 | Matrix | Solid |
| Total Amount Extracted | 10.6 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/13/2017 14:50 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Analyzed | 12/16/2017 17:49 |
| Method Blank ID | BLANK-59101 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 91 | 2,3,7,8-TCDF-13C | 2.0 | 59 |
| Total TCDF | | | | 2,3,7,8-TCDD-13C | 2.0 | 57 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.0 | 56 |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 93 | 2,3,4,7,8-PeCDF-13C | 2.0 | 57 |
| Total TCDD | | | | 1,2,3,7,8-PeCDD-13C | 2.0 | 60 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.0 | 70 |
| 1,2,3,7,8-PeCDF | 1.0 | 0.95 | 95 | 1,2,3,6,7,8-HxCDF-13C | 2.0 | 79 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.86 | 86 | 2,3,4,6,7,8-HxCDF-13C | 2.0 | 81 |
| Total PeCDF | | | | 1,2,3,7,8,9-HxCDF-13C | 2.0 | 64 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.0 | 68 |
| 1,2,3,7,8-PeCDD | 1.0 | 0.87 | 87 | 1,2,3,6,7,8-HxCDD-13C | 2.0 | 73 |
| Total PeCDD | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 66 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 54 |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.94 | 94 | 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 64 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.88 | 88 | OCDD-13C | 4.0 | 44 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.84 | 84 | | | |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.85 | 85 | 1,2,3,4-TCDD-13C | 2.0 | NA |
| Total HxCDF | | | | 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 1,2,3,4,7,8-HxCDD | 1.0 | 1.0 | 100 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.98 | 98 | | | |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.95 | 95 | | | |
| Total HxCDD | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.94 | 94 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.93 | 93 | | | |
| Total HpCDF | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.85 | 85 | | | |
| Total HpCDD | | | | | | |
| OCDF | 2.0 | 2.0 | 100 | | | |
| OCDD | 2.0 | 1.9 | 94 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1711796-01-MS | | |
| Lab Sample ID | 10412990001-MS | | |
| Filename | U171209A_03 | Matrix | Solid |
| Total Amount Extracted | 11.2 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/04/2017 14:40 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Analyzed | 12/09/2017 13:35 |
| Method Blank ID | BLANK-58998 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.23 | 116 | 2,3,7,8-TCDF-13C | 2.00 | 57 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 56 |
| 2,3,7,8-TCDD | 0.20 | 0.23 | 114 | 2,3,4,7,8-PeCDF-13C | 2.00 | 57 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.15 | 115 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 62 |
| 2,3,4,7,8-PeCDF | 1.00 | 1.04 | 104 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 57 |
| 1,2,3,7,8-PeCDD | 1.00 | 1.05 | 105 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 59 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 1.10 | 110 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 60 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 1.03 | 103 | OCDD-13C | 4.00 | 48 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 1.04 | 104 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 1.06 | 106 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 1.21 | 121 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 1.11 | 111 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 1.05 | 105 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 1.12 | 112 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 1.10 | 110 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 1.01 | 101 | | | |
| OCDF | 2.00 | 2.29 | 114 | | | |
| OCDD | 2.00 | 2.28 | 114 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1711796-01-MSD | | |
| Lab Sample ID | 10412990001-MSD | | |
| Filename | U171209A_04 | Matrix | Solid |
| Total Amount Extracted | 11.1 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/04/2017 14:40 |
| CCal Filename(s) | U171208B_17 & U171209A_17 | Analyzed | 12/09/2017 14:19 |
| Method Blank ID | BLANK-58998 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.23 | 117 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | 0.20 | 0.23 | 114 | 2,3,4,7,8-PeCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 58 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.16 | 116 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 58 |
| 2,3,4,7,8-PeCDF | 1.00 | 1.03 | 103 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 48 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 57 |
| 1,2,3,7,8-PeCDD | 1.00 | 1.05 | 105 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 50 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 47 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 43 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 1.06 | 106 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 52 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 1.05 | 105 | OCDD-13C | 4.00 | 41 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 1.03 | 103 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 1.08 | 108 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 1.07 | 107 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 53 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 1.18 | 118 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 1.04 | 104 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 1.15 | 115 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 1.11 | 111 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 1.02 | 102 | | | |
| OCDF | 2.00 | 2.26 | 113 | | | |
| OCDD | 2.00 | 2.26 | 113 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spike Sample Results

Client - ESS Laboratory

| | | | | | |
|---|---|---|---|---|---|
| Client Sample ID | 1711796-01 | | | Dry Weights | |
| Lab Sample ID | 10412990001 | Sample Filename | U171209A_06 | Sample Amount | 10.4 g |
| MS ID | 10412990001-MS | MS Filename | U171209A_03 | MS Amount | 10.8 g |
| MSD ID | 10412990001-MSD | MSD Filename | U171209A_04 | MSD Amount | 10.7 g |

| Analyte | Sample Conc. ng/Kg | MS/MSD Qs (ng) | MS Qm (ng) | MSD Qm (ng) | RPD | Background Subtracted MS % Rec. | MSD % Rec. | RPD |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.000 | 0.20 | 0.23 | 0.23 | 0.8 | 116 | 117 | 0.8 |
| 2,3,7,8-TCDD | 0.000 | 0.20 | 0.23 | 0.23 | 0.1 | 114 | 114 | 0.1 |
| 1,2,3,7,8-PeCDF | 0.000 | 1.00 | 1.15 | 1.16 | 0.8 | 115 | 116 | 0.8 |
| 2,3,4,7,8-PeCDF | 0.000 | 1.00 | 1.04 | 1.03 | 0.2 | 104 | 103 | 0.2 |
| 1,2,3,7,8-PeCDD | 0.000 | 1.00 | 1.05 | 1.05 | 0.6 | 105 | 105 | 0.6 |
| 1,2,3,4,7,8-HxCDF | 0.000 | 1.00 | 1.10 | 1.06 | 2.9 | 110 | 106 | 2.9 |
| 1,2,3,6,7,8-HxCDF | 0.000 | 1.00 | 1.03 | 1.05 | 1.1 | 103 | 105 | 1.1 |
| 2,3,4,6,7,8-HxCDF | 0.000 | 1.00 | 1.04 | 1.03 | 1.1 | 104 | 103 | 1.1 |
| 1,2,3,7,8,9-HxCDF | 0.000 | 1.00 | 1.06 | 1.08 | 2.4 | 106 | 108 | 2.4 |
| 1,2,3,4,7,8-HxCDD | 0.000 | 1.00 | 1.21 | 1.07 | 12.2 | 121 | 107 | 12.2 |
| 1,2,3,6,7,8-HxCDD | 0.000 | 1.00 | 1.11 | 1.18 | 5.7 | 111 | 118 | 5.7 |
| 1,2,3,7,8,9-HxCDD | 0.000 | 1.00 | 1.05 | 1.04 | 0.8 | 105 | 104 | 0.8 |
| 1,2,3,4,6,7,8-HpCDF | 0.000 | 1.00 | 1.12 | 1.15 | 2.7 | 112 | 115 | 2.7 |
| 1,2,3,4,7,8,9-HpCDF | 0.000 | 1.00 | 1.10 | 1.11 | 0.8 | 110 | 111 | 0.8 |
| 1,2,3,4,6,7,8-HpCDD | 0.000 | 1.00 | 1.01 | 1.02 | 1.0 | 101 | 102 | 1.0 |
| OCDF | 0.000 | 2.00 | 2.29 | 2.26 | 1.0 | 114 | 113 | 1.0 |
| OCDD | 0.000 | 2.00 | 2.28 | 2.26 | 1.2 | 113 | 112 | 1.2 |

**Definitions**

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711796
Date Received: 11/30/2017
Project Due Date: 12/7/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? No
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 08 – 10
    Analysis: DIOXIN
    TAT: 5 D
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
    b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

Added -08, -09, -10 per ML w ~~[illegible]~~ 12/1/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? _____ Date: _____ Time: _____ By: _____

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 186493 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 186512 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 186513 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 186550 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 01 | 186551 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 01 | 186552 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 186553 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 186492 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 186510 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 186511 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 186546 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 186547 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 02 | 186548 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 186549 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 186491 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 186508 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 186509 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 186542 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 186543 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 03 | 186544 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 186545 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 186490 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 186506 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 186507 | Yes | NA | Yes | VOA Vial - Other | Other | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711796
Date Received: 11/30/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 186538 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 04 | 186539 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 04 | 186540 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 186541 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 186489 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 186504 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 186505 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 186534 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 186535 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 05 | 186536 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 186537 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 186488 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 186502 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 186503 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 186530 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 186531 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 06 | 186532 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 186533 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 186487 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 186500 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 186501 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 186526 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 186527 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 07 | 186528 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 186529 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 186680 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 186681 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 186684 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 186687 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 08 | 186690 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 186695 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 186696 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 186678 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 186679 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 186683 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 186686 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 09 | 186689 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 186693 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 186694 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 186676 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 186677 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 186682 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 186685 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 10 | 186688 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 186691 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 186692 | Yes | NA | Yes | VOA Vial - Other | Other |

2nd Review
Are barcode labels on correct containers? Yes No

Completed By: _____ Date & Time: 12/1/17 1400

Reviewed By: _____ Date & Time: 12/1/17 1520

Delivered By: _____ 12/1/17 1520

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711796
Date Received: 11/30/2017
Project Due Date: 12/7/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? No
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: **1 through 7**
    Analysis: **Dioxins 8290**
    TAT: **STD**
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 11/30/17 Time: 1453 By: EL

Sample Receiving Notes:

**Did not receive: A-Capping sand-015, A-capping sand-016,A-capping sand-017** 11/30/17

**Rec'd: C-06,C-07,C-08-not listed on COC**

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Katherine Mason Date: 12/1/17 Time: 1022 By: ML

Devon Wilton provided a revised COC on 12/1/17. Project updated accordingly.

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 186493 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 186512 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 186513 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 186550 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 01 | 186551 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 01 | 186552 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 186553 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 186492 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 186510 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 186511 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 186546 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 186547 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 02 | 186548 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 186549 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 186491 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 186508 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 186509 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 186542 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 186543 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 03 | 186544 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 186545 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 186490 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 186506 | Yes | NA | Yes | VOA Vial - Other | Other | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711796
Date Received: 11/30/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 186507 | Yes | NA | Yes | VOA Vial - Other | Other |
| 04 | 186538 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 04 | 186539 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 04 | 186540 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 186541 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 186489 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 186504 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 186505 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 186534 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 186535 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 05 | 186536 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 186537 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 186488 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 186502 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 186503 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 186530 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 186531 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 06 | 186532 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 186533 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 186487 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 186500 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 186501 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 186526 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 186527 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 07 | 186528 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 186529 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |

2nd Review
Are barcode labels on correct containers? Yes No

Completed By: [signature] Date & Time: 11/30/17 1930

Reviewed By: [signature] Date & Time: 11/30/17 1954

Delivered By: [signature] 11/30/17 1954

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1711796
Date Received: 11/30/2017
Project Due Date: 12/7/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? No
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: **1 through 7**
    Analysis: **Dioxins 8290**
    TAT: **STD**
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 11/30/17 Time: 1453 By: EL

Sample Receiving Notes:

**Did not receive: A-Capping sand-015, A-capping sand-016,A-capping sand-017** 11/30/17

**Rec'd: C-06,C-07,C-08-not listed on COC**

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? ____ Date: ____ Time: ____ By: ____

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 186493 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 186512 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 186513 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 186550 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 01 | 186551 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 01 | 186552 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 186553 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 186492 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 186510 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 186511 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 186546 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 186547 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 02 | 186548 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 186549 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 186491 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 186508 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 186509 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 186542 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 186543 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 03 | 186544 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 186545 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 186490 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 186506 | Yes | NA | Yes | VOA Vial - Other | Other | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1711796
Date Received: 11/30/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 186507 | Yes | NA | Yes | VOA Vial - Other | Other |
| 04 | 186538 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 04 | 186539 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 04 | 186540 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 186541 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 186489 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 186504 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 186505 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 186534 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 186535 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 05 | 186536 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 186537 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 186488 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 186502 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 186503 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 186530 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 186531 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 06 | 186532 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 186533 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 186487 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 186500 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 186501 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 186526 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 186527 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 07 | 186528 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 186529 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |

2nd Review
Are barcode labels on correct containers? Yes No

Completed By: [signature] Date & Time: 11/30/17 1930

Reviewed By: [signature] Date & Time: 11/30/17 1954

Delivered By: [signature] 11/30/17 1954

Changes made 12/1/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1711796

Turn Time 5-Day Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1
Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/30/17 | 1:45 | Grab | Soil | Type A - Capping Sand - 010 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 11/30/17 | 1:48 | Grab | Soil | Type A - Capping Sand - 011 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 11/30/17 | 1:51 | Grab | Soil | Type A - Capping Sand - 012 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 11/30/17 | 1:54 | Grab | Soil | Type A - Capping Sand - 013 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 11/30/17 | 1:57 | Grab | Soil | Type A - Capping Sand - 014 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 11/30/17 | ~~2:00~~ | 210 Grab | Soil | Type C ~~Type A~~ - Capping Sand - ~~015~~ 006 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 11/30/17 | ~~2:05~~ | 213 Grab | Soil | Type C ~~Type A~~ - Capping Sand - ~~016~~ 007 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 11/30/17 | ~~2:10~~ | 217 Grab | Soil | Type C ~~Type A~~ - Capping Sand - ~~017~~ 008 | X | X | X | X | X | X | X | X | X | X | X |
| 6 09 | 11/30/17 | ~~2:13~~ | 200 Grab | Soil | Type C - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 7 10 | 11/30/17 | ~~2:17~~ | 205 Grab | Soil | Type C - Capping Sand - 005 | X | X | X | X | X | X | X | X | X | X | X |

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

**Laboratory Use Only**
Cooler Present: Yes
Seals Intact: NA
Cooler Temperature: °C ice temp: 1.8

Sampled by: Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 11/30 2:30 | 11/30/17 14:32 | 11/30/17 17:45 | 11/30/17 1832 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1711796

Turn Time 5-Day Rush

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/30/17 | 1:45 | Grab | Soil | Type A - Capping Sand - 010 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 02 | 11/30/17 | 1:48 | Grab | Soil | Type A - Capping Sand - 011 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 03 | 11/30/17 | 1:51 | Grab | Soil | Type A - Capping Sand - 012 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 04 | 11/30/17 | 1:54 | Grab | Soil | Type A - Capping Sand - 013 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 05 | 11/30/17 | 1:57 | Grab | Soil | Type A - Capping Sand - 014 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 06 | 11/30/17 | 2:00 | Grab | Soil | Type A - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 07 | 11/30/17 | 2:05 | Grab | Soil | Type A - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 08 | 11/30/17 | 2:10 | Grab | Soil | Type A - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 6 09 | 11/30/17 | 2:13 | Grab | Soil | Type C - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 7 10 | 11/30/17 | 2:17 | Grab | Soil | Type C - Capping Sand - 005 | X | X | X | X | X | X | X | X | X | X | X | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: Yes

Seals Intact: NA

Cooler Temperature: °C ice temp: 1.8

**Sampled by :** Aggregate Industries QC

**Comments:** Please specify "Other" preservative and containers types in this space

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 11/30 2:30 | 11/30/17 14:32 | 11/30/17 17:45 | 11/30/17 1832 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1712171**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 5:22 pm, Dec 21, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**

| | |
|---|---|
| CTS - Cranston, RI | Grain Size Analysis, Soil Classification, Water Content |
| Pace Analytical - Minneapolis, MN | Dioxin |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

## SAMPLE RECEIPT

The following samples were received on December 11, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on December 7, 2017 at 15:08.**

**These samples were originally received on December 7, 2017.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712171-01 | Type A - Capping Sand - 015 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-02 | Type A - Capping Sand - 016 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-03 | Type A - Capping Sand - 017 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-04 | Type A - Capping Sand - 018 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-05 | Type A - Capping Sand - 019 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-06 | Type C - Capping Sand - 009 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-07 | Type C - Capping Sand - 010 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-08 | Type C - Capping Sand - 011 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-09 | Type C - Capping Sand - 012 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712171-10 | Type C - Capping Sand - 013 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712171

| | | | |
|---|---|---|---|
| 1712171-11 | Trip Blank | Solid | 8260B Low |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712171

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

C7L0188-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
1,4-Dioxane (23% @ 20%), 2-Hexanone (26% @ 20%), 4-Methyl-2-Pentanone (24% @ 20%), Dichlorodifluoromethane (25% @ 20%), Naphthalene (28% @ 20%), sec-Butylbenzene (28% @ 20%), Tetrahydrofuran (33% @ 20%)

**8081B Organochlorine Pesticides**

CL71351-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Aldrin (38% @ 30%), Aldrin [2C] (38% @ 30%), Methoxychlor (43% @ 30%), Methoxychlor [2C] (46% @ 30%)

**8151A Chlorinated Herbicides**

1712171-06 **Modified result**
MCPP [2C]
1712171-06 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**
1712171-07 **Modified result**
MCPP [2C]
1712171-07 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**
1712171-08 **Modified result**
MCPP [2C]
1712171-08 **Peaks found in the retention time window for MCPP did not confirm by GC/MS.**

**8270D Semi-Volatile Organic Compounds**

C7L0179-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (101% @ 80-120%)
C7L0179-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (129% @ 80-120%), Pentachlorophenol (112% @ 80-120%)
C7L0179-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4-Dinitrophenol (29% @ 20%)
C7L0179-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
N-Nitrosodimethylamine (27% @ 20%)
C7L0183-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (97% @ 80-120%), 2,6-Dinitrotoluene (97% @ 80-120%)
C7L0183-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (86% @ 80-120%), Pentachlorophenol (87% @ 80-120%)
C7L0183-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (30% @ 20%), Pyridine (22% @ 20%)
C7L0184-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (82% @ 80-120%), Pentachlorophenol (76% @ 80-120%)
C7L0184-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Aniline (24% @ 20%)
C7L0184-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712171

N-Nitrosodimethylamine (36% @ 20%), Pentachlorophenol (24% @ 20%), Pyridine (36% @ 20%)

C7L0184-CCV1 **Surrogate recovery(ies) above upper control limit (S+).**
2-Fluorophenol (124% @ 80-120%)

C7L0200-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (101% @ 80-120%)

C7L0200-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Pentachlorophenol (98% @ 80-120%)

C7L0200-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (23% @ 20%)

C7L0225-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (90% @ 80-120%), 2,6-Dinitrotoluene (93% @ 80-120%)

C7L0225-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (100% @ 80-120%)

C7L0225-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (22% @ 20%), N-Nitrosodimethylamine (31% @ 20%)

**Total Metals**

CL71225-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (22% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712171-01 through 1712171-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (X) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | (X) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | ( ) MassDEP EPH CAM IV B | (X) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes (X) No ( )* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard
Date: December 21, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.42) | | 6020A | | 20 | NAR | 12/13/17 21:27 | 2.49 | 100 | CL71225 |
| **Arsenic** | **2.57** (2.09) | | 6010C | | 1 | KJK | 12/16/17 1:56 | 2.49 | 100 | CL71225 |
| **Barium** | **3.69** (2.09) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| **Beryllium** | **0.45** (0.09) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| Cadmium | ND (0.42) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| **Chromium** | **0.89** (0.84) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| **Lead** | **5.20** (4.18) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| Mercury | ND (0.026) | | 7471B | | 1 | MJV | 12/13/17 14:25 | 0.8 | 40 | CL71226 |
| Nickel | ND (2.09) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| Selenium | ND (0.42) | | 6020A | | 20 | NAR | 12/13/17 21:27 | 2.49 | 100 | CL71225 |
| Silver | ND (0.42) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| Thallium | ND (0.42) | | 6020A | | 20 | NAR | 12/13/17 21:27 | 2.49 | 100 | CL71225 |
| Vanadium | ND (0.84) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |
| **Zinc** | **7.65** (2.09) | | 6010C | | 1 | KJK | 12/14/17 23:14 | 2.49 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0867) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Acetone | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0087) | | 8260B Low | | 1 | 12/13/17 17:34 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *118 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *100 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *113 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Chlordane (Total) | ND (0.0213) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/14/17 16:44 | C7L0182 | CL71351 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *70 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *75 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 16:55

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:30 | | CL71113 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *94 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| MCPA | ND (2.37) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |
| MCPP | ND (2.40) | | 8151A | | 1 | 12/20/17 20:08 | C7L0310 | CL71832 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *59 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *62 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,4-Dichlorophenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,4-Dimethylphenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,4-Dinitrophenol | ND (1.68) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2-Chloronaphthalene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2-Chlorophenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2-Methylnaphthalene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2-Methylphenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 2-Nitrophenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.671) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 3+4-Methylphenol | ND (0.671) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 4-Chloroaniline | ND (0.671) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| 4-Nitrophenol | ND (1.68) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Acenaphthene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Acenaphthylene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Acetophenone | ND (0.671) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Aniline | ND (1.68) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Anthracene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Azobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Benzo(a)anthracene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Benzo(a)pyrene | ND (0.168) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Benzo(b)fluoranthene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Benzo(k)fluoranthene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Butylbenzylphthalate | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Chrysene | ND (0.168) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.168) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Dibenzofuran | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Diethylphthalate | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Dimethylphthalate | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Di-n-butylphthalate | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Di-n-octylphthalate | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Fluoranthene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Fluorene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Hexachlorobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Hexachlorobutadiene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Hexachloroethane | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Isophorone | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Naphthalene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Nitrobenzene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| N-Nitrosodimethylamine | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Pentachlorophenol | ND (1.68) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Phenanthrene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Phenol | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |
| Pyrene | ND (0.335) | | 8270D | | 1 | 12/14/17 0:47 | C7L0184 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *81 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *77 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *74 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10
Percent Solids: 96
Initial Volume: 15.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *85 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *79 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *83 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *81 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 015
Date Sampled: 12/07/17 12:10

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Total Organic Carbon (Average)** | **252** (73.7) | | 9060 | | 1 | DEL | 12/15/17 18:20 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.45) | | 6020A | | 20 | NAR | 12/13/17 22:08 | 2.33 | 100 | CL71225 |
| **Arsenic** | **2.61** (2.23) | | 6010C | | 1 | KJK | 12/16/17 2:16 | 2.33 | 100 | CL71225 |
| **Barium** | **2.61** (2.23) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| **Beryllium** | **0.42** (0.10) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| Cadmium | ND (0.45) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| **Chromium** | **7.38** (0.89) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| **Lead** | **4.93** (4.47) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| Mercury | ND (0.030) | | 7471B | | 1 | MJV | 12/13/17 14:39 | 0.68 | 40 | CL71226 |
| **Nickel** | **4.26** (2.23) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| Selenium | ND (0.45) | | 6020A | | 20 | NAR | 12/14/17 15:57 | 2.33 | 100 | CL71225 |
| Silver | ND (0.45) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| Thallium | ND (0.45) | | 6020A | | 20 | NAR | 12/13/17 22:08 | 2.33 | 100 | CL71225 |
| **Vanadium** | **1.86** (0.89) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |
| **Zinc** | **15.5** (2.23) | | 6010C | | 1 | KJK | 12/14/17 23:46 | 2.33 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0897) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Acetone | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Benzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Bromoform | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Chloroform | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Styrene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Toluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Xylene O | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0090) | | 8260B Low | | 1 | 12/13/17 18:00 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *117 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *112 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 19.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Chlordane (Total) | ND (0.0209) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/14/17 17:14 | C7L0182 | CL71351 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *95 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *63 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *69 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 20.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:33 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *84 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *73 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| MCPA | ND (2.37) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |
| MCPP | ND (2.40) | | 8151A | | 1 | 12/20/17 20:39 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *59 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *62 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,4-Dichlorophenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,4-Dimethylphenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,4-Dinitrophenol | ND (1.70) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2-Chloronaphthalene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2-Chlorophenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2-Methylnaphthalene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2-Methylphenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 2-Nitrophenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.680) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 3+4-Methylphenol | ND (0.680) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 4-Chloroaniline | ND (0.680) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| 4-Nitrophenol | ND (1.70) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Acenaphthene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Acenaphthylene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Acetophenone | ND (0.680) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Aniline | ND (1.70) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Anthracene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Azobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Benzo(a)anthracene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Benzo(a)pyrene | ND (0.170) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Benzo(b)fluoranthene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Benzo(k)fluoranthene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Butylbenzylphthalate | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Chrysene | ND (0.170) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.170) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Dibenzofuran | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Diethylphthalate | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Dimethylphthalate | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Di-n-butylphthalate | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Di-n-octylphthalate | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Fluoranthene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Fluorene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Hexachlorobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Hexachlorobutadiene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Hexachloroethane | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Isophorone | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Naphthalene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Nitrobenzene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| N-Nitrosodimethylamine | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Pentachlorophenol | ND (1.70) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Phenanthrene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Phenol | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |
| Pyrene | ND (0.340) | | 8270D | | 1 | 12/13/17 18:38 | C7L0200 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *68 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *73 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *69 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *74 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *63 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *65 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *89 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 016
Date Sampled: 12/07/17 12:13

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (92.8) | | 9060 | | 1 | DEL | 12/15/17 19:10 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.32) | | 6020A | | 20 | NAR | 12/13/17 22:14 | 3.23 | 100 | CL71225 |
| Arsenic | ND (3.21) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| Barium | ND (3.21) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| **Beryllium** | **0.48** (0.14) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| Cadmium | ND (0.64) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| Chromium | ND (1.28) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| Lead | ND (6.42) | | 6010C | | 2 | KJK | 12/16/17 17:05 | 3.23 | 100 | CL71225 |
| Mercury | ND (0.028) | | 7471B | | 1 | MJV | 12/13/17 14:41 | 0.74 | 40 | CL71226 |
| Nickel | ND (3.21) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| Selenium | ND (0.32) | | 6020A | | 20 | NAR | 12/14/17 16:02 | 3.23 | 100 | CL71225 |
| Silver | ND (0.64) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| Thallium | ND (0.32) | | 6020A | | 20 | NAR | 12/13/17 22:14 | 3.23 | 100 | CL71225 |
| Vanadium | ND (1.28) | | 6010C | | 2 | KJK | 12/16/17 2:21 | 3.23 | 100 | CL71225 |
| **Zinc** | **7.43** (3.21) | | 6010C | | 2 | KJK | 12/16/17 17:05 | 3.23 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0978) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Acetone | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Benzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Bromoform | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Chloroform | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Styrene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Toluene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Xylene O | ND (0.0049) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0098) | | 8260B Low | | 1 | 12/13/17 18:25 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *118 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *113 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Chlordane (Total) | ND (0.0216) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/14/17 17:43 | C7L0182 | CL71351 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *99 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *70 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *77 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 13:51 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *93 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *90 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| MCPA | ND (2.36) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |
| MCPP | ND (2.39) | | 8151A | | 1 | 12/20/17 21:11 | C7L0310 | CL71832 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *63 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *66 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,4-Dichlorophenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,4-Dimethylphenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,4-Dinitrophenol | ND (1.85) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2-Chloronaphthalene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2-Chlorophenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2-Methylnaphthalene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2-Methylphenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 2-Nitrophenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.741) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 3+4-Methylphenol | ND (0.741) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 4-Chloroaniline | ND (0.741) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| 4-Nitrophenol | ND (1.85) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Acenaphthene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Acenaphthylene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Acetophenone | ND (0.741) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Aniline | ND (1.85) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Anthracene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Azobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Benzo(a)anthracene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Benzo(a)pyrene | ND (0.185) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Benzo(b)fluoranthene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Benzo(k)fluoranthene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Butylbenzylphthalate | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Chrysene | ND (0.185) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.185) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Dibenzofuran | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Diethylphthalate | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Dimethylphthalate | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Di-n-butylphthalate | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Di-n-octylphthalate | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Fluoranthene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Fluorene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Hexachlorobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Hexachlorobutadiene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Hexachloroethane | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Isophorone | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Naphthalene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Nitrobenzene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| N-Nitrosodimethylamine | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Pentachlorophenol | ND (1.85) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Phenanthrene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Phenol | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |
| Pyrene | ND (0.370) | | 8270D | | 1 | 12/14/17 21:10 | C7L0225 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *68 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *82 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *75 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16
Percent Solids: 96
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *61 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *72 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *67 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *96 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 017
Date Sampled: 12/07/17 12:16

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (84.0) | | 9060 | | 1 | DEL | 12/15/17 19:31 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.39) | | 6020A | | 20 | NAR | 12/13/17 22:20 | 2.66 | 100 | CL71225 |
| Arsenic | ND (1.95) | | 6010C | | 1 | KJK | 12/16/17 2:25 | 2.66 | 100 | CL71225 |
| **Barium** | **2.30** (1.95) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| **Beryllium** | **0.47** (0.09) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| Cadmium | ND (0.39) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| Chromium | ND (0.78) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| **Lead** | **5.52** (3.90) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| Mercury | ND (0.021) | | 7471B | | 1 | MJV | 12/13/17 14:43 | 0.99 | 40 | CL71226 |
| Nickel | ND (1.95) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| Selenium | ND (0.39) | | 6020A | | 20 | NAR | 12/14/17 16:08 | 2.66 | 100 | CL71225 |
| Silver | ND (0.39) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| Thallium | ND (0.39) | | 6020A | | 20 | NAR | 12/13/17 22:20 | 2.66 | 100 | CL71225 |
| Vanadium | ND (0.78) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |
| **Zinc** | **8.16** (1.95) | | 6010C | | 1 | KJK | 12/14/17 23:55 | 2.66 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0836) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Acetone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 18:50 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *123 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *115 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *99 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/11/17 17:15

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Chlordane (Total) | ND (0.0212) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/14/17 18:13 | C7L0182 | CL71351 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *99 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *66 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *71 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:10 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *102 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *93 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| MCPA | ND (2.39) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/20/17 21:43 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *65 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *70 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,4-Dichlorophenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,4-Dimethylphenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,4-Dinitrophenol | ND (1.80) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2-Chloronaphthalene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2-Chlorophenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2-Methylnaphthalene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2-Methylphenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 2-Nitrophenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.721) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 3+4-Methylphenol | ND (0.721) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 4-Chloroaniline | ND (0.721) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| 4-Nitrophenol | ND (1.80) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Acenaphthene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Acenaphthylene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Acetophenone | ND (0.721) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Aniline | ND (1.80) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Anthracene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Azobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Benzo(a)anthracene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Benzo(a)pyrene | ND (0.180) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Benzo(b)fluoranthene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Benzo(k)fluoranthene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Butylbenzylphthalate | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Chrysene | ND (0.180) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.180) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Dibenzofuran | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Diethylphthalate | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Dimethylphthalate | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Di-n-butylphthalate | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Di-n-octylphthalate | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Fluoranthene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Fluorene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Hexachlorobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Hexachlorobutadiene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Hexachloroethane | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Isophorone | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Naphthalene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Nitrobenzene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| N-Nitrosodimethylamine | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Pentachlorophenol | ND (1.80) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Phenanthrene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Phenol | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |
| Pyrene | ND (0.360) | | 8270D | | 1 | 12/14/17 21:44 | C7L0225 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *70 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *85 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *78 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19
Percent Solids: 96
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *62 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *73 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *65 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *97 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 018
Date Sampled: 12/07/17 12:19

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Total Organic Carbon (Average)** | **84.2** (66.5) | | 9060 | | 1 | DEL | 12/15/17 20:26 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.33) | | 6020A | | 20 | NAR | 12/13/17 22:26 | 3.17 | 100 | CL71225 |
| Arsenic | ND (1.63) | | 6010C | | 1 | KJK | 12/16/17 2:41 | 3.17 | 100 | CL71225 |
| **Barium** | **2.33** (1.63) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| **Beryllium** | **0.43** (0.07) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| Cadmium | ND (0.33) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| **Chromium** | **1.00** (0.65) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| **Lead** | **5.30** (3.26) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| Mercury | ND (0.023) | | 7471B | | 1 | MJV | 12/13/17 14:45 | 0.88 | 40 | CL71226 |
| Nickel | ND (1.63) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| Selenium | ND (0.33) | | 6020A | | 20 | NAR | 12/14/17 16:14 | 3.17 | 100 | CL71225 |
| Silver | ND (0.33) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| Thallium | ND (0.33) | | 6020A | | 20 | NAR | 12/13/17 22:26 | 3.17 | 100 | CL71225 |
| Vanadium | ND (0.65) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |
| **Zinc** | **5.81** (1.63) | | 6010C | | 1 | KJK | 12/14/17 23:59 | 3.17 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,1,1-Trichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,1,2-Trichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,1-Dichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,1-Dichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,1-Dichloropropene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2,3-Trichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2,3-Trichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2,4-Trichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2,4-Trimethylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2-Dibromoethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2-Dichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2-Dichloroethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,2-Dichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,3,5-Trimethylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,3-Dichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,3-Dichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,4-Dichlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 1,4-Dioxane | ND (0.103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 2,2-Dichloropropane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 2-Butanone | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 2-Chlorotoluene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 2-Hexanone | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 4-Chlorotoluene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 4-Isopropyltoluene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| 4-Methyl-2-Pentanone | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Acetone | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Benzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Bromobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Bromochloromethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Bromoform | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Bromomethane | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Carbon Disulfide | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Carbon Tetrachloride | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Chlorobenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Chloroethane | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Chloroform | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Chloromethane | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| cis-1,2-Dichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| cis-1,3-Dichloropropene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Dibromomethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Dichlorodifluoromethane | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Diethyl Ether | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Di-isopropyl ether | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Ethyl tertiary-butyl ether | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Ethylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Hexachlorobutadiene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Isopropylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Methyl tert-Butyl Ether | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Methylene Chloride | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Naphthalene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| n-Butylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| n-Propylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| sec-Butylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Styrene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| tert-Butylbenzene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Tertiary-amyl methyl ether | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Tetrachloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Tetrahydrofuran | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Toluene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| trans-1,3-Dichloropropene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Trichloroethene | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Trichlorofluoromethane | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Vinyl Chloride | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Xylene O | ND (0.0052) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Xylene P,M | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | C7L0221 | CL71434 |
| Xylenes (Total) | ND (0.0103) | | 8260B Low | | 1 | 12/14/17 15:45 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *113 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *108 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0211) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/14/17 22:08 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *104 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *115 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *87 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 14:29 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *95 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *102 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *84 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *96 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| MCPA | ND (2.38) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |
| MCPP | ND (2.40) | | 8151A | | 1 | 12/20/17 22:15 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *68 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,4-Dichlorophenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,4-Dimethylphenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,4-Dinitrophenol | ND (1.63) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2-Chloronaphthalene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2-Chlorophenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2-Methylnaphthalene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2-Methylphenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 2-Nitrophenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.650) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 3+4-Methylphenol | ND (0.650) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 4-Chloroaniline | ND (0.650) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| 4-Nitrophenol | ND (1.63) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Acenaphthene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Acenaphthylene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Acetophenone | ND (0.650) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Aniline | ND (1.63) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Anthracene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Azobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Benzo(a)anthracene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Benzo(a)pyrene | ND (0.163) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Benzo(b)fluoranthene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Benzo(k)fluoranthene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Butylbenzylphthalate | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Chrysene | ND (0.163) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.163) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Dibenzofuran | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Diethylphthalate | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Dimethylphthalate | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Di-n-butylphthalate | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Di-n-octylphthalate | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Fluoranthene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Fluorene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Hexachlorobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Hexachlorobutadiene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Hexachloroethane | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Isophorone | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Naphthalene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Nitrobenzene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| N-Nitrosodimethylamine | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Pentachlorophenol | ND (1.63) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Phenanthrene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Phenol | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |
| Pyrene | ND (0.325) | | 8270D | | 1 | 12/14/17 22:18 | C7L0225 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *66 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *78 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *65 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *74 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25
Percent Solids: 97
Initial Volume: 15.9
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *58 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *68 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *61 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *95 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 019
Date Sampled: 12/07/17 12:25

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Total Organic Carbon (Average)** | **224** (67.7) | | 9060 | | 1 | DEL | 12/15/17 20:43 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 22:32 | 2.19 | 100 | CL71225 |
| **Arsenic** | **11.8** (2.52) | | 6010C | | 1 | KJK | 12/16/17 2:45 | 2.19 | 100 | CL71225 |
| **Barium** | **19.5** (2.52) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| **Beryllium** | **0.37** (0.11) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| Cadmium | ND (0.50) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| **Chromium** | **50.0** (1.01) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| **Lead** | **36.0** (5.05) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| Mercury | ND (0.034) | | 7471B | | 1 | MJV | 12/13/17 14:47 | 0.65 | 40 | CL71226 |
| **Nickel** | **23.2** (2.52) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| Selenium | ND (0.50) | | 6020A | | 20 | NAR | 12/14/17 16:20 | 2.19 | 100 | CL71225 |
| Silver | ND (1.01) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| **Thallium** | **0.56** (0.50) | | 6020A | | 20 | NAR | 12/13/17 22:32 | 2.19 | 100 | CL71225 |
| **Vanadium** | **19.0** (1.01) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |
| **Zinc** | **34.4** (2.52) | | 6010C | | 1 | KJK | 12/15/17 0:03 | 2.19 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 11.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0010) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0477) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Acetone | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Benzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 11.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Bromoform | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Chloroform | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0010) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Styrene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Toluene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 11.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Xylene O | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0048) | | 8260B Low | | 1 | 12/13/17 19:41 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *129 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0228) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/14/17 23:36 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *97 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *75 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 14:48 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *95 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *102 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *88 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| Dicamba [2C] | ND (0.010) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| MCPA | ND (2.55) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |
| MCPP [2C] | # ND (2.57) | | 8151A | | 1 | 12/20/17 22:47 | C7L0310 | CL71832 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *66 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *93 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,4-Dichlorophenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,4-Dimethylphenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,4-Dinitrophenol | ND (1.94) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2-Chloronaphthalene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2-Chlorophenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2-Methylnaphthalene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2-Methylphenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 2-Nitrophenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.774) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 3+4-Methylphenol | ND (0.774) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 4-Chloroaniline | ND (0.774) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| 4-Nitrophenol | ND (1.94) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Acenaphthene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Acenaphthylene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Acetophenone | ND (0.774) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Aniline | ND (1.94) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Anthracene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Azobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Benzo(a)anthracene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Benzo(a)pyrene | ND (0.194) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Benzo(b)fluoranthene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Benzo(k)fluoranthene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Butylbenzylphthalate | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Chrysene | ND (0.194) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.194) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Dibenzofuran | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Diethylphthalate | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Dimethylphthalate | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Di-n-butylphthalate | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Di-n-octylphthalate | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Fluoranthene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Fluorene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Hexachlorobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Hexachlorobutadiene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Hexachloroethane | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Isophorone | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Naphthalene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Nitrobenzene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| N-Nitrosodimethylamine | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Pentachlorophenol | ND (1.94) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Phenanthrene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Phenol | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |
| Pyrene | ND (0.386) | | 8270D | | 1 | 12/14/17 22:52 | C7L0225 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *53 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *68 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *53 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *61 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *47 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *56 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *49 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *77 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 009
Date Sampled: 12/07/17 12:28

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (94.8) | | 9060 | | 1 | DEL | 12/15/17 21:02 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.49) | | 6020A | | 20 | NAR | 12/13/17 22:38 | 2.27 | 100 | CL71225 |
| **Arsenic** | **11.2** (2.44) | | 6010C | | 1 | KJK | 12/16/17 2:49 | 2.27 | 100 | CL71225 |
| **Barium** | **27.3** (2.44) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| **Beryllium** | **0.39** (0.11) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| Cadmium | ND (0.49) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| **Chromium** | **59.1** (0.98) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| **Lead** | **25.8** (4.89) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| Mercury | ND (0.029) | | 7471B | | 1 | MJV | 12/13/17 14:49 | 0.77 | 40 | CL71226 |
| **Nickel** | **24.3** (2.44) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| Selenium | ND (0.49) | | 6020A | | 20 | NAR | 12/14/17 16:37 | 2.27 | 100 | CL71225 |
| Silver | ND (0.49) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| **Thallium** | **0.49** (0.49) | | 6020A | | 20 | NAR | 12/13/17 22:38 | 2.27 | 100 | CL71225 |
| **Vanadium** | **18.0** (0.98) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |
| **Zinc** | **30.2** (2.44) | | 6010C | | 1 | KJK | 12/15/17 0:07 | 2.27 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0841) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Acetone | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0084) | | 8260B Low | | 1 | 12/13/17 20:06 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *122 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *115 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0229) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:05 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *106 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *68 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *77 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:06 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *87 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| 2,4-D | ND (0.052) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.052) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| MCPA | ND (2.55) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |
| MCPP [2C] | # ND (2.58) | | 8151A | | 1 | 12/20/17 23:18 | C7L0310 | CL71832 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *65 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,4-Dichlorophenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,4-Dimethylphenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,4-Dinitrophenol | ND (1.92) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2-Chloronaphthalene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2-Chlorophenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2-Methylnaphthalene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2-Methylphenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 2-Nitrophenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.766) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 3+4-Methylphenol | ND (0.766) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 4-Chloroaniline | ND (0.766) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| 4-Nitrophenol | ND (1.92) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Acenaphthene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Acenaphthylene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Acetophenone | ND (0.766) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Aniline | ND (1.92) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Anthracene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Azobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Benzo(a)anthracene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Benzo(a)pyrene | ND (0.192) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Benzo(b)fluoranthene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Benzo(k)fluoranthene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Butylbenzylphthalate | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Chrysene | ND (0.192) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.192) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Dibenzofuran | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Diethylphthalate | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Dimethylphthalate | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Di-n-butylphthalate | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Di-n-octylphthalate | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Fluoranthene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Fluorene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Hexachlorobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Hexachlorobutadiene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Hexachloroethane | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Isophorone | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Naphthalene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Nitrobenzene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| N-Nitrosodimethylamine | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Pentachlorophenol | ND (1.92) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Phenanthrene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Phenol | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |
| Pyrene | ND (0.382) | | 8270D | | 1 | 12/14/17 23:26 | C7L0225 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *67 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *79 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *68 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *72 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32
Percent Solids: 90
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *60 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *70 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *62 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *97 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 010
Date Sampled: 12/07/17 12:32

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Total Organic Carbon (Average)** | **140** (75.5) | | 9060 | | 1 | DEL | 12/15/17 21:26 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 12/13/17 22:43 | 2.38 | 100 | CL71225 |
| **Arsenic** | **9.92** (2.33) | | 6010C | | 1 | KJK | 12/16/17 2:53 | 2.38 | 100 | CL71225 |
| **Barium** | **22.3** (2.33) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| **Beryllium** | **0.37** (0.10) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| **Chromium** | **49.6** (0.93) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| **Lead** | **24.5** (4.66) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| Mercury | ND (0.028) | | 7471B | | 1 | MJV | 12/13/17 14:51 | 0.79 | 40 | CL71226 |
| **Nickel** | **21.0** (2.33) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 12/14/17 16:43 | 2.38 | 100 | CL71225 |
| Silver | ND (0.93) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| Thallium | ND (0.47) | | 6020A | | 20 | NAR | 12/13/17 22:43 | 2.38 | 100 | CL71225 |
| **Vanadium** | **17.0** (0.93) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |
| **Zinc** | **29.6** (2.33) | | 6010C | | 1 | KJK | 12/15/17 0:11 | 2.38 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0016) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0780) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Acetone | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Benzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Bromoform | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Chloroform | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0016) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Styrene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Toluene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 7.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Xylene O | ND (0.0039) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0078) | | 8260B Low | | 1 | 12/13/17 20:32 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *124 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *117 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0228) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 0:34 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *98 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *71 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 15:25 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| Dalapon | ND (0.049) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| MCPA | ND (2.53) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |
| MCPP [2C] | # ND (2.55) | | 8151A | | 1 | 12/20/17 23:50 | C7L0310 | CL71832 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *68 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 1,2-Dichlorobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 1,3-Dichlorobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 1,4-Dichlorobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,4,5-Trichlorophenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,4,6-Trichlorophenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,4-Dichlorophenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,4-Dimethylphenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,4-Dinitrophenol | ND (1.94) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,4-Dinitrotoluene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2,6-Dinitrotoluene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2-Chloronaphthalene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2-Chlorophenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2-Methylnaphthalene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2-Methylphenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 2-Nitrophenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 3,3′-Dichlorobenzidine | ND (0.775) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 3+4-Methylphenol | ND (0.775) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 4-Bromophenyl-phenylether | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 4-Chloroaniline | ND (0.775) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| 4-Nitrophenol | ND (1.94) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Acenaphthene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Acenaphthylene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Acetophenone | ND (0.775) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Aniline | ND (1.94) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Anthracene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Azobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Benzo(a)anthracene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Benzo(a)pyrene | ND (0.194) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Benzo(b)fluoranthene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Benzo(g,h,i)perylene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Benzo(k)fluoranthene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| bis(2-Chloroethyl)ether | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| bis(2-chloroisopropyl)Ether | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| bis(2-Ethylhexyl)phthalate | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Butylbenzylphthalate | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Chrysene | ND (0.194) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Dibenzo(a,h)Anthracene | ND (0.194) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Dibenzofuran | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Diethylphthalate | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Dimethylphthalate | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Di-n-butylphthalate | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Di-n-octylphthalate | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Fluoranthene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Fluorene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Hexachlorobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Hexachlorobutadiene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Hexachloroethane | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Indeno(1,2,3-cd)Pyrene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Isophorone | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Naphthalene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Nitrobenzene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| N-Nitrosodimethylamine | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Pentachlorophenol | ND (1.94) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Phenanthrene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Phenol | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |
| Pyrene | ND (0.387) | | 8270D | | 1 | 12/15/17 0:00 | C7L0225 | CL71119 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *73 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *84 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *72 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *81 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/11/17 17:25

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *64 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *76 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *67 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *95 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 011
Date Sampled: 12/07/17 12:36

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (116) | | 9060 | | 1 | DEL | 12/15/17 21:44 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.38) | | 6020A | | 20 | NAR | 12/13/17 22:49 | 2.96 | 100 | CL71225 |
| **Arsenic** | **13.4** (1.89) | | 6010C | | 1 | KJK | 12/16/17 2:57 | 2.96 | 100 | CL71225 |
| **Barium** | **25.1** (1.89) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| **Beryllium** | **0.41** (0.08) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| Cadmium | ND (0.38) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| **Chromium** | **52.4** (0.76) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| **Lead** | **23.1** (3.78) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| Mercury | ND (0.031) | | 7471B | | 1 | MJV | 12/13/17 14:53 | 0.71 | 40 | CL71226 |
| **Nickel** | **20.8** (1.89) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| Selenium | ND (0.38) | | 6020A | | 20 | NAR | 12/14/17 16:49 | 2.96 | 100 | CL71225 |
| Silver | ND (0.38) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| **Thallium** | **0.41** (0.38) | | 6020A | | 20 | NAR | 12/13/17 22:49 | 2.96 | 100 | CL71225 |
| **Vanadium** | **15.5** (0.76) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |
| **Zinc** | **27.1** (1.89) | | 6010C | | 1 | KJK | 12/15/17 0:15 | 2.96 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0016) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0822) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Acetone | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Benzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Bromoform | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Chloroform | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0016) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Styrene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Toluene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 6.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Xylene O | ND (0.0041) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0082) | | 8260B Low | | 1 | 12/13/17 20:57 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *123 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *116 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *102 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0232) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 1:04 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *98 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *82 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 15:44 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *88 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| 2,4-D | ND (0.052) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.053) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.052) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| Dinoseb | ND (0.053) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| MCPA | ND (2.57) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |
| MCPP | ND (2.60) | | 8151A | | 1 | 12/21/17 0:22 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *69 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.97) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.788) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.788) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.788) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.97) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Acetophenone | ND (0.788) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Aniline | ND (1.97) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Anthracene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Azobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.197) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Chrysene | ND (0.197) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.197) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Fluorene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Isophorone | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Naphthalene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.97) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Phenol | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |
| Pyrene | ND (0.393) | | 8270D | | 1 | 12/15/17 0:34 | C7L0225 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *87 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *75 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40
Percent Solids: 89
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *68 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *80 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *68 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *96 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 012
Date Sampled: 12/07/17 12:40

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (91.0) | | 9060 | | 1 | DEL | 12/15/17 22:37 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.44) | | 6020A | | 20 | NAR | 12/13/17 22:55 | 2.53 | 100 | CL71225 |
| **Arsenic** | **18.3** (2.18) | | 6010C | | 1 | KJK | 12/16/17 3:01 | 2.53 | 100 | CL71225 |
| **Barium** | **21.0** (2.18) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| **Beryllium** | **0.41** (0.10) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| Cadmium | ND (0.44) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| **Chromium** | **58.6** (0.87) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| **Lead** | **21.7** (4.36) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| Mercury | ND (0.022) | | 7471B | | 1 | MJV | 12/13/17 14:59 | 0.98 | 40 | CL71226 |
| **Nickel** | **26.1** (2.18) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| Selenium | ND (0.44) | | 6020A | | 20 | NAR | 12/14/17 16:55 | 2.53 | 100 | CL71225 |
| Silver | ND (0.87) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| **Thallium** | **0.46** (0.44) | | 6020A | | 20 | NAR | 12/13/17 22:55 | 2.53 | 100 | CL71225 |
| **Vanadium** | **16.3** (0.87) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |
| **Zinc** | **27.9** (2.18) | | 6010C | | 1 | KJK | 12/15/17 0:19 | 2.53 | 100 | CL71225 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0848) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Acetone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 21:23 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *117 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 20.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0215) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 1:33 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *86 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *98 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 20.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:02 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *75 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| MCPA | ND (2.54) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |
| MCPP | ND (2.57) | | 8151A | | 1 | 12/21/17 0:54 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *66 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.93) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.771) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.771) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.771) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.93) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Acetophenone | ND (0.771) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Aniline | ND (1.93) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Anthracene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Azobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.193) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Chrysene | ND (0.193) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.193) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Fluorene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Isophorone | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Naphthalene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.93) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Phenol | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |
| Pyrene | ND (0.385) | | 8270D | | 1 | 12/15/17 2:16 | C7L0225 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *86 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *102 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *86 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *99 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44
Percent Solids: 91
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *77 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *90 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *79 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *112 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 013
Date Sampled: 12/07/17 12:44

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (81.9) | | 9060 | | 1 | DEL | 12/15/17 22:59 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 1,4-Dioxane | ND (0.100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 2-Butanone | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 2-Hexanone | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| 4-Methyl-2-Pentanone | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Acetone | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Bromomethane | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Chloroethane | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Chloromethane | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Dichlorodifluoromethane | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Methylene Chloride | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712171
ESS Laboratory Sample ID: 1712171-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Vinyl Chloride | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Xylene P,M | ND (0.0100) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |
| Xylenes (Total) | ND (0.0075) | | 8260B Low | | 1 | 12/12/17 15:40 | C7L0167 | CL71215 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *111 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *108 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *100 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CL71225 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Antimony | ND | 0.50 | mg/kg wet | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Selenium | ND | 0.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Thallium | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 55.0 | 4.17 | mg/kg wet | 48.00 | | 115 | 80-120 | | | |
| Arsenic | 112 | 8.33 | mg/kg wet | 123.0 | | 91 | 80-120 | | | |
| Barium | 277 | 8.33 | mg/kg wet | 253.0 | | 109 | 66-134 | | | |
| Beryllium | 183 | 0.37 | mg/kg wet | 192.0 | | 95 | 80-120 | | | |
| Cadmium | 205 | 1.67 | mg/kg wet | 224.0 | | 91 | 80-120 | | | |
| Chromium | 173 | 3.33 | mg/kg wet | 179.0 | | 97 | 80-120 | | | |
| Lead | 142 | 16.7 | mg/kg wet | 145.0 | | 98 | 80-120 | | | |
| Nickel | 128 | 8.33 | mg/kg wet | 143.0 | | 89 | 80-120 | | | |
| Selenium | 41.0 | 4.17 | mg/kg wet | 42.40 | | 97 | 80-120 | | | |
| Silver | 83.1 | 1.67 | mg/kg wet | 81.60 | | 102 | 80-120 | | | |
| Thallium | 53.5 | 4.17 | mg/kg wet | 52.00 | | 103 | 80-120 | | | |
| Vanadium | 68.5 | 3.33 | mg/kg wet | 72.30 | | 95 | 80-120 | | | |
| Zinc | 696 | 8.33 | mg/kg wet | 770.0 | | 90 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 47.4 | 2.98 | mg/kg wet | 48.00 | | 99 | 80-120 | 15 | 30 | |
| Arsenic | 118 | 5.95 | mg/kg wet | 123.0 | | 96 | 80-120 | 5 | 20 | |
| Barium | 221 | 5.95 | mg/kg wet | 253.0 | | 87 | 66-134 | 22 | 20 | D+ |
| Beryllium | 189 | 0.26 | mg/kg wet | 192.0 | | 98 | 80-120 | 3 | 20 | |
| Cadmium | 218 | 1.19 | mg/kg wet | 224.0 | | 97 | 80-120 | 6 | 20 | |
| Chromium | 184 | 2.38 | mg/kg wet | 179.0 | | 103 | 80-120 | 6 | 20 | |
| Lead | 148 | 11.9 | mg/kg wet | 145.0 | | 102 | 80-120 | 4 | 20 | |
| Nickel | 133 | 5.95 | mg/kg wet | 143.0 | | 93 | 80-120 | 4 | 20 | |
| Selenium | 38.9 | 2.98 | mg/kg wet | 42.40 | | 92 | 80-120 | 5 | 30 | |
| Silver | 88.3 | 1.19 | mg/kg wet | 81.60 | | 108 | 80-120 | 6 | 20 | |
| Thallium | 48.7 | 2.98 | mg/kg wet | 52.00 | | 94 | 80-120 | 9 | 30 | |
| Vanadium | 72.6 | 2.38 | mg/kg wet | 72.30 | | 100 | 80-120 | 6 | 20 | |
| Zinc | 747 | 5.95 | mg/kg wet | 770.0 | | 97 | 80-120 | 7 | 20 | |
| **Batch CL71226 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CL71226 - 7471B** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 18.1 | 1.68 | mg/kg wet | 17.80 | | 101 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 19.0 | 1.74 | mg/kg wet | 17.80 | | 107 | 80-120 | 5 | 20 | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71215 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71215 - 5035** | | | | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg | | | | | | | |
| Xylenes (Total) | ND | 0.0075 | mg/kg | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0541* | | mg/kg | *0.05000* | | *108* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0476* | | mg/kg | *0.05000* | | *95* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0529* | | mg/kg | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0499* | | mg/kg | *0.05000* | | *100* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0538 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0650 | 0.0050 | mg/kg | 0.05000 | | 130 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0500 | 0.0020 | mg/kg | 0.05000 | | 100 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71215 - 5035** | | | | | | | | | | |
| 1,1,2-Trichloroethane | 0.0548 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0551 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0557 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0599 | 0.0050 | mg/kg | 0.05000 | | 120 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0549 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0535 | 0.0050 | mg/kg | 0.05000 | | 107 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0550 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0559 | 0.0050 | mg/kg | 0.05000 | | 112 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0501 | 0.0050 | mg/kg | 0.05000 | | 100 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0527 | 0.0050 | mg/kg | 0.05000 | | 105 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0538 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0602 | 0.0050 | mg/kg | 0.05000 | | 120 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0541 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0556 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0534 | 0.0050 | mg/kg | 0.05000 | | 107 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0539 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0541 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| 1,4-Dioxane | 0.946 | 0.100 | mg/kg | 1.000 | | 95 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0634 | 0.0050 | mg/kg | 0.05000 | | 127 | 70-130 | | | |
| 2-Butanone | 0.271 | 0.0100 | mg/kg | 0.2500 | | 108 | 70-130 | | | |
| 2-Chlorotoluene | 0.0539 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| 2-Hexanone | 0.216 | 0.0100 | mg/kg | 0.2500 | | 86 | 70-130 | | | |
| 4-Chlorotoluene | 0.0550 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0544 | 0.0050 | mg/kg | 0.05000 | | 109 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.233 | 0.0100 | mg/kg | 0.2500 | | 93 | 70-130 | | | |
| Acetone | 0.272 | 0.0100 | mg/kg | 0.2500 | | 109 | 70-130 | | | |
| Benzene | 0.0551 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| Bromobenzene | 0.0536 | 0.0050 | mg/kg | 0.05000 | | 107 | 70-130 | | | |
| Bromochloromethane | 0.0553 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| Bromodichloromethane | 0.0647 | 0.0050 | mg/kg | 0.05000 | | 129 | 70-130 | | | |
| Bromoform | 0.0574 | 0.0050 | mg/kg | 0.05000 | | 115 | 70-130 | | | |
| Bromomethane | 0.0556 | 0.0100 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| Carbon Disulfide | 0.0588 | 0.0050 | mg/kg | 0.05000 | | 118 | 70-130 | | | |
| Carbon Tetrachloride | 0.0623 | 0.0050 | mg/kg | 0.05000 | | 125 | 70-130 | | | |
| Chlorobenzene | 0.0528 | 0.0050 | mg/kg | 0.05000 | | 106 | 70-130 | | | |
| Chloroethane | 0.0552 | 0.0100 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| Chloroform | 0.0579 | 0.0050 | mg/kg | 0.05000 | | 116 | 70-130 | | | |
| Chloromethane | 0.0572 | 0.0100 | mg/kg | 0.05000 | | 114 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0553 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0542 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| Dibromochloromethane | 0.0508 | 0.0020 | mg/kg | 0.05000 | | 102 | 70-130 | | | |
| Dibromomethane | 0.0552 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0544 | 0.0100 | mg/kg | 0.05000 | | 109 | 70-130 | | | |
| Diethyl Ether | 0.0557 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| Di-isopropyl ether | 0.0518 | 0.0050 | mg/kg | 0.05000 | | 104 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71215 - 5035** | | | | | | | | | | |
| Ethyl tertiary-butyl ether | 0.0546 | 0.0050 | mg/kg | 0.05000 | | 109 | 70-130 | | | |
| Ethylbenzene | 0.0534 | 0.0050 | mg/kg | 0.05000 | | 107 | 70-130 | | | |
| Hexachlorobutadiene | 0.0587 | 0.0050 | mg/kg | 0.05000 | | 117 | 70-130 | | | |
| Isopropylbenzene | 0.0516 | 0.0050 | mg/kg | 0.05000 | | 103 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0554 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| Methylene Chloride | 0.0579 | 0.0100 | mg/kg | 0.05000 | | 116 | 70-130 | | | |
| Naphthalene | 0.0454 | 0.0050 | mg/kg | 0.05000 | | 91 | 70-130 | | | |
| n-Butylbenzene | 0.0542 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| n-Propylbenzene | 0.0547 | 0.0050 | mg/kg | 0.05000 | | 109 | 70-130 | | | |
| sec-Butylbenzene | 0.0438 | 0.0050 | mg/kg | 0.05000 | | 88 | 70-130 | | | |
| Styrene | 0.0476 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | | | |
| tert-Butylbenzene | 0.0552 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0536 | 0.0050 | mg/kg | 0.05000 | | 107 | 70-130 | | | |
| Tetrachloroethene | 0.0509 | 0.0050 | mg/kg | 0.05000 | | 102 | 70-130 | | | |
| Tetrahydrofuran | 0.0424 | 0.0050 | mg/kg | 0.05000 | | 85 | 70-130 | | | |
| Toluene | 0.0553 | 0.0050 | mg/kg | 0.05000 | | 111 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0545 | 0.0050 | mg/kg | 0.05000 | | 109 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0538 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | | | |
| Trichloroethene | 0.0561 | 0.0050 | mg/kg | 0.05000 | | 112 | 70-130 | | | |
| Trichlorofluoromethane | 0.0615 | 0.0050 | mg/kg | 0.05000 | | 123 | 70-130 | | | |
| Vinyl Chloride | 0.0595 | 0.0100 | mg/kg | 0.05000 | | 119 | 70-130 | | | |
| Xylene O | 0.0546 | 0.0050 | mg/kg | 0.05000 | | 109 | 70-130 | | | |
| Xylene P,M | 0.107 | 0.0100 | mg/kg | 0.1000 | | 107 | 70-130 | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0569* | | mg/kg | *0.05000* | | *114* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0521* | | mg/kg | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0557* | | mg/kg | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0486* | | mg/kg | *0.05000* | | *97* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0482 | 0.0050 | mg/kg | 0.05000 | | 96 | 70-130 | 11 | 25 | |
| 1,1,1-Trichloroethane | 0.0558 | 0.0050 | mg/kg | 0.05000 | | 112 | 70-130 | 15 | 25 | |
| 1,1,2,2-Tetrachloroethane | 0.0443 | 0.0020 | mg/kg | 0.05000 | | 89 | 70-130 | 12 | 25 | |
| 1,1,2-Trichloroethane | 0.0473 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 15 | 25 | |
| 1,1-Dichloroethane | 0.0471 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 16 | 25 | |
| 1,1-Dichloroethene | 0.0492 | 0.0050 | mg/kg | 0.05000 | | 98 | 70-130 | 13 | 25 | |
| 1,1-Dichloropropene | 0.0520 | 0.0050 | mg/kg | 0.05000 | | 104 | 70-130 | 14 | 25 | |
| 1,2,3-Trichlorobenzene | 0.0493 | 0.0050 | mg/kg | 0.05000 | | 99 | 70-130 | 11 | 25 | |
| 1,2,3-Trichloropropane | 0.0475 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 12 | 25 | |
| 1,2,4-Trichlorobenzene | 0.0492 | 0.0050 | mg/kg | 0.05000 | | 98 | 70-130 | 11 | 25 | |
| 1,2,4-Trimethylbenzene | 0.0494 | 0.0050 | mg/kg | 0.05000 | | 99 | 70-130 | 12 | 25 | |
| 1,2-Dibromo-3-Chloropropane | 0.0460 | 0.0050 | mg/kg | 0.05000 | | 92 | 70-130 | 9 | 25 | |
| 1,2-Dibromoethane | 0.0467 | 0.0050 | mg/kg | 0.05000 | | 93 | 70-130 | 12 | 25 | |
| 1,2-Dichlorobenzene | 0.0480 | 0.0050 | mg/kg | 0.05000 | | 96 | 70-130 | 12 | 25 | |
| 1,2-Dichloroethane | 0.0518 | 0.0050 | mg/kg | 0.05000 | | 104 | 70-130 | 15 | 25 | |
| 1,2-Dichloropropane | 0.0468 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 15 | 25 | |
| 1,3,5-Trimethylbenzene | 0.0494 | 0.0050 | mg/kg | 0.05000 | | 99 | 70-130 | 12 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71215 - 5035** | | | | | | | | | | |
| 1,3-Dichlorobenzene | 0.0473 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 12 | 25 | |
| 1,3-Dichloropropane | 0.0481 | 0.0050 | mg/kg | 0.05000 | | 96 | 70-130 | 11 | 25 | |
| 1,4-Dichlorobenzene | 0.0473 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 13 | 25 | |
| 1,4-Dioxane | 0.869 | 0.100 | mg/kg | 1.000 | | 87 | 70-130 | 8 | 20 | |
| 2,2-Dichloropropane | 0.0541 | 0.0050 | mg/kg | 0.05000 | | 108 | 70-130 | 16 | 25 | |
| 2-Butanone | 0.236 | 0.0100 | mg/kg | 0.2500 | | 94 | 70-130 | 14 | 25 | |
| 2-Chlorotoluene | 0.0478 | 0.0050 | mg/kg | 0.05000 | | 96 | 70-130 | 12 | 25 | |
| 2-Hexanone | 0.199 | 0.0100 | mg/kg | 0.2500 | | 79 | 70-130 | 8 | 25 | |
| 4-Chlorotoluene | 0.0481 | 0.0050 | mg/kg | 0.05000 | | 96 | 70-130 | 13 | 25 | |
| 4-Isopropyltoluene | 0.0483 | 0.0050 | mg/kg | 0.05000 | | 97 | 70-130 | 12 | 25 | |
| 4-Methyl-2-Pentanone | 0.205 | 0.0100 | mg/kg | 0.2500 | | 82 | 70-130 | 13 | 25 | |
| Acetone | 0.239 | 0.0100 | mg/kg | 0.2500 | | 96 | 70-130 | 13 | 25 | |
| Benzene | 0.0473 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 15 | 25 | |
| Bromobenzene | 0.0476 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 12 | 25 | |
| Bromochloromethane | 0.0469 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 16 | 25 | |
| Bromodichloromethane | 0.0548 | 0.0050 | mg/kg | 0.05000 | | 110 | 70-130 | 17 | 25 | |
| Bromoform | 0.0518 | 0.0050 | mg/kg | 0.05000 | | 104 | 70-130 | 10 | 25 | |
| Bromomethane | 0.0484 | 0.0100 | mg/kg | 0.05000 | | 97 | 70-130 | 14 | 25 | |
| Carbon Disulfide | 0.0503 | 0.0050 | mg/kg | 0.05000 | | 101 | 70-130 | 16 | 25 | |
| Carbon Tetrachloride | 0.0533 | 0.0050 | mg/kg | 0.05000 | | 107 | 70-130 | 16 | 25 | |
| Chlorobenzene | 0.0467 | 0.0050 | mg/kg | 0.05000 | | 93 | 70-130 | 12 | 25 | |
| Chloroethane | 0.0474 | 0.0100 | mg/kg | 0.05000 | | 95 | 70-130 | 15 | 25 | |
| Chloroform | 0.0495 | 0.0050 | mg/kg | 0.05000 | | 99 | 70-130 | 16 | 25 | |
| Chloromethane | 0.0493 | 0.0100 | mg/kg | 0.05000 | | 99 | 70-130 | 15 | 25 | |
| cis-1,2-Dichloroethene | 0.0470 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 16 | 25 | |
| cis-1,3-Dichloropropene | 0.0472 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 14 | 25 | |
| Dibromochloromethane | 0.0455 | 0.0020 | mg/kg | 0.05000 | | 91 | 70-130 | 11 | 25 | |
| Dibromomethane | 0.0473 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 15 | 25 | |
| Dichlorodifluoromethane | 0.0463 | 0.0100 | mg/kg | 0.05000 | | 93 | 70-130 | 16 | 25 | |
| Diethyl Ether | 0.0487 | 0.0050 | mg/kg | 0.05000 | | 97 | 70-130 | 13 | 25 | |
| Di-isopropyl ether | 0.0450 | 0.0050 | mg/kg | 0.05000 | | 90 | 70-130 | 14 | 25 | |
| Ethyl tertiary-butyl ether | 0.0471 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 15 | 25 | |
| Ethylbenzene | 0.0474 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 12 | 25 | |
| Hexachlorobutadiene | 0.0524 | 0.0050 | mg/kg | 0.05000 | | 105 | 70-130 | 11 | 25 | |
| Isopropylbenzene | 0.0460 | 0.0050 | mg/kg | 0.05000 | | 92 | 70-130 | 11 | 25 | |
| Methyl tert-Butyl Ether | 0.0488 | 0.0050 | mg/kg | 0.05000 | | 98 | 70-130 | 13 | 25 | |
| Methylene Chloride | 0.0488 | 0.0100 | mg/kg | 0.05000 | | 98 | 70-130 | 17 | 25 | |
| Naphthalene | 0.0411 | 0.0050 | mg/kg | 0.05000 | | 82 | 70-130 | 10 | 25 | |
| n-Butylbenzene | 0.0481 | 0.0050 | mg/kg | 0.05000 | | 96 | 70-130 | 12 | 25 | |
| n-Propylbenzene | 0.0484 | 0.0050 | mg/kg | 0.05000 | | 97 | 70-130 | 12 | 25 | |
| sec-Butylbenzene | 0.0387 | 0.0050 | mg/kg | 0.05000 | | 77 | 70-130 | 12 | 25 | |
| Styrene | 0.0425 | 0.0050 | mg/kg | 0.05000 | | 85 | 70-130 | 11 | 25 | |
| tert-Butylbenzene | 0.0490 | 0.0050 | mg/kg | 0.05000 | | 98 | 70-130 | 12 | 25 | |
| Tertiary-amyl methyl ether | 0.0465 | 0.0050 | mg/kg | 0.05000 | | 93 | 70-130 | 14 | 25 | |
| Tetrachloroethene | 0.0458 | 0.0050 | mg/kg | 0.05000 | | 92 | 70-130 | 11 | 25 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71215 - 5035** | | | | | | | | | | |
| Tetrahydrofuran | 0.0385 | 0.0050 | mg/kg | 0.05000 | | 77 | 70-130 | 10 | 25 | |
| Toluene | 0.0474 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 15 | 25 | |
| trans-1,2-Dichloroethene | 0.0476 | 0.0050 | mg/kg | 0.05000 | | 95 | 70-130 | 14 | 25 | |
| trans-1,3-Dichloropropene | 0.0471 | 0.0050 | mg/kg | 0.05000 | | 94 | 70-130 | 13 | 25 | |
| Trichloroethene | 0.0483 | 0.0050 | mg/kg | 0.05000 | | 97 | 70-130 | 15 | 25 | |
| Trichlorofluoromethane | 0.0529 | 0.0050 | mg/kg | 0.05000 | | 106 | 70-130 | 15 | 25 | |
| Vinyl Chloride | 0.0508 | 0.0100 | mg/kg | 0.05000 | | 102 | 70-130 | 16 | 25 | |
| Xylene O | 0.0486 | 0.0050 | mg/kg | 0.05000 | | 97 | 70-130 | 12 | 25 | |
| Xylene P,M | 0.0950 | 0.0100 | mg/kg | 0.1000 | | 95 | 70-130 | 12 | 25 | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0564* | | mg/kg | *0.05000* | | *113* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0526* | | mg/kg | *0.05000* | | *105* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0547* | | mg/kg | *0.05000* | | *109* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0494* | | mg/kg | *0.05000* | | *99* | *70-130* | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0557* | | mg/kg wet | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0477* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0537* | | mg/kg wet | *0.05000* | | *107* | *70-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| *Surrogate: Toluene-d8* | *0.0499* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0627 | 0.0050 | mg/kg wet | 0.05000 | | 125 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0462 | 0.0020 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0555 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0477 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0586 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,4-Dioxane | 0.885 | 0.100 | mg/kg wet | 1.000 | | 89 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0594 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | | | |
| 2-Butanone | 0.263 | 0.0100 | mg/kg wet | 0.2500 | | 105 | 70-130 | | | |
| 2-Chlorotoluene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 2-Hexanone | 0.201 | 0.0100 | mg/kg wet | 0.2500 | | 80 | 70-130 | | | |
| 4-Chlorotoluene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.226 | 0.0100 | mg/kg wet | 0.2500 | | 90 | 70-130 | | | |
| Acetone | 0.265 | 0.0100 | mg/kg wet | 0.2500 | | 106 | 70-130 | | | |
| Benzene | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Bromobenzene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Bromochloromethane | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Bromodichloromethane | 0.0618 | 0.0050 | mg/kg wet | 0.05000 | | 124 | 70-130 | | | |
| Bromoform | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Bromomethane | 0.0535 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Carbon Disulfide | 0.0555 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Carbon Tetrachloride | 0.0606 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | | | |
| Chlorobenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Chloroethane | 0.0509 | 0.0100 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Chloroform | 0.0556 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Chloromethane | 0.0528 | 0.0100 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| cis-1,3-Dichloropropene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Dibromochloromethane | 0.0477 | 0.0020 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Dibromomethane | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0517 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Diethyl Ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Di-isopropyl ether | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Ethylbenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Hexachlorobutadiene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Isopropylbenzene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Methylene Chloride | 0.0538 | 0.0100 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Naphthalene | 0.0390 | 0.0050 | mg/kg wet | 0.05000 | | 78 | 70-130 | | | |
| n-Butylbenzene | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| n-Propylbenzene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| sec-Butylbenzene | 0.0393 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Styrene | 0.0418 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| tert-Butylbenzene | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Tetrachloroethene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Tetrahydrofuran | 0.0394 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Toluene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Trichloroethene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Trichlorofluoromethane | 0.0591 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| Vinyl Chloride | 0.0555 | 0.0100 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Xylene O | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Xylene P,M | 0.0949 | 0.0100 | mg/kg wet | 0.1000 | | 95 | 70-130 | | | |
| Xylenes (Total) | 0.143 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0612* | | mg/kg wet | *0.05000* | | *122* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0515* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0585* | | mg/kg wet | *0.05000* | | *117* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0479* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| 1,1,1-Trichloroethane | 0.0597 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | 5 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0472 | 0.0020 | mg/kg wet | 0.05000 | | 94 | 70-130 | 2 | 20 | |
| 1,1,2-Trichloroethane | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 7 | 20 | |
| 1,1-Dichloroethane | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| 1,1-Dichloropropene | 0.0557 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | 0.3 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| 1,2,3-Trichloropropane | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 9 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,2-Dibromoethane | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 7 | 20 | |
| 1,2-Dichlorobenzene | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 20 | |
| 1,2-Dichloroethane | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 9 | 20 | |
| 1,2-Dichloropropane | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 5 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| 1,3-Dichlorobenzene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 5 | 20 | |
| 1,3-Dichloropropane | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| 1,4-Dichlorobenzene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 20 | |
| 1,4-Dioxane | 0.881 | 0.100 | mg/kg wet | 1.000 | | 88 | 70-130 | 0.5 | 20 | |
| 2,2-Dichloropropane | 0.0595 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | 0.1 | 20 | |
| 2-Butanone | 0.257 | 0.0100 | mg/kg wet | 0.2500 | | 103 | 70-130 | 2 | 20 | |
| 2-Chlorotoluene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| 2-Hexanone | 0.223 | 0.0100 | mg/kg wet | 0.2500 | | 89 | 70-130 | 10 | 20 | |
| 4-Chlorotoluene | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| 4-Isopropyltoluene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| 4-Methyl-2-Pentanone | 0.219 | 0.0100 | mg/kg wet | 0.2500 | | 88 | 70-130 | 3 | 20 | |
| Acetone | 0.311 | 0.0100 | mg/kg wet | 0.2500 | | 125 | 70-130 | 16 | 20 | |
| Benzene | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 4 | 20 | |
| Bromobenzene | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 5 | 20 | |
| Bromochloromethane | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 7 | 20 | |
| Bromodichloromethane | 0.0571 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 8 | 20 | |
| Bromoform | 0.0564 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 4 | 20 | |
| Bromomethane | 0.0513 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| Carbon Disulfide | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 2 | 20 | |
| Carbon Tetrachloride | 0.0574 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 5 | 20 | |
| Chlorobenzene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 8 | 20 | |
| Chloroethane | 0.0517 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Chloroform | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 7 | 20 | |
| Chloromethane | 0.0543 | 0.0100 | mg/kg wet | 0.05000 | | 109 | 70-130 | 3 | 20 | |
| cis-1,2-Dichloroethene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| cis-1,3-Dichloropropene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| Dibromochloromethane | 0.0489 | 0.0020 | mg/kg wet | 0.05000 | | 98 | 70-130 | 3 | 20 | |
| Dibromomethane | 0.0484 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 9 | 20 | |
| Dichlorodifluoromethane | 0.0510 | 0.0100 | mg/kg wet | 0.05000 | | 102 | 70-130 | 1 | 20 | |
| Diethyl Ether | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 0.6 | 20 | |
| Di-isopropyl ether | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 20 | |
| Ethyl tertiary-butyl ether | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| Ethylbenzene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 10 | 20 | |
| Hexachlorobutadiene | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 6 | 20 | |
| Isopropylbenzene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 7 | 20 | |
| Methyl tert-Butyl Ether | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Methylene Chloride | 0.0505 | 0.0100 | mg/kg wet | 0.05000 | | 101 | 70-130 | 6 | 20 | |
| Naphthalene | 0.0426 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 9 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| n-Butylbenzene | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| n-Propylbenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 6 | 20 | |
| sec-Butylbenzene | 0.0405 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | 3 | 20 | |
| Styrene | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 9 | 20 | |
| tert-Butylbenzene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 6 | 20 | |
| Tertiary-amyl methyl ether | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 2 | 20 | |
| Tetrachloroethene | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 11 | 20 | |
| Tetrahydrofuran | 0.0402 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | 2 | 20 | |
| Toluene | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 20 | |
| trans-1,2-Dichloroethene | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| trans-1,3-Dichloropropene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 1 | 20 | |
| Trichloroethene | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| Trichlorofluoromethane | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 3 | 20 | |
| Vinyl Chloride | 0.0562 | 0.0100 | mg/kg wet | 0.05000 | | 112 | 70-130 | 1 | 20 | |
| Xylene O | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 7 | 20 | |
| Xylene P,M | 0.103 | 0.0100 | mg/kg wet | 0.1000 | | 103 | 70-130 | 8 | 20 | |
| Xylenes (Total) | 0.155 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0538* | | mg/kg wet | *0.05000* | | *108* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0531* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0526* | | mg/kg wet | *0.05000* | | *105* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0506* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0529* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0480* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0522* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0501* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0610 | 0.0050 | mg/kg wet | 0.05000 | | 122 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0488 | 0.0020 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0545 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0572 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0552 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0553 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0551 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dioxane | 0.905 | 0.100 | mg/kg wet | 1.000 | | 91 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0595 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | | | |
| 2-Butanone | 0.250 | 0.0100 | mg/kg wet | 0.2500 | | 100 | 70-130 | | | |
| 2-Chlorotoluene | 0.0536 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 2-Hexanone | 0.205 | 0.0100 | mg/kg wet | 0.2500 | | 82 | 70-130 | | | |
| 4-Chlorotoluene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.214 | 0.0100 | mg/kg wet | 0.2500 | | 85 | 70-130 | | | |
| Acetone | 0.249 | 0.0100 | mg/kg wet | 0.2500 | | 100 | 70-130 | | | |
| Benzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Bromobenzene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromochloromethane | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Bromodichloromethane | 0.0598 | 0.0050 | mg/kg wet | 0.05000 | | 120 | 70-130 | | | |
| Bromoform | 0.0548 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Bromomethane | 0.0536 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| Carbon Disulfide | 0.0549 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Carbon Tetrachloride | 0.0584 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | | | |
| Chlorobenzene | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Chloroethane | 0.0530 | 0.0100 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Chloroform | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Chloromethane | 0.0554 | 0.0100 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Dibromochloromethane | 0.0492 | 0.0020 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Dibromomethane | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0540 | 0.0100 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Diethyl Ether | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Di-isopropyl ether | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Ethylbenzene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Hexachlorobutadiene | 0.0586 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | | | |
| Isopropylbenzene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Methylene Chloride | 0.0526 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Naphthalene | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| n-Butylbenzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| n-Propylbenzene | 0.0545 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| sec-Butylbenzene | 0.0433 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Styrene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| tert-Butylbenzene | 0.0552 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Tetrachloroethene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Tetrahydrofuran | 0.0404 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | | | |
| Toluene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Trichloroethene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Trichlorofluoromethane | 0.0578 | 0.0050 | mg/kg wet | 0.05000 | | 116 | 70-130 | | | |
| Vinyl Chloride | 0.0569 | 0.0100 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| Xylene O | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Xylene P,M | 0.104 | 0.0100 | mg/kg wet | 0.1000 | | 104 | 70-130 | | | |
| Xylenes (Total) | 0.157 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0531* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0504* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0530* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0490* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,1,1-Trichloroethane | 0.0570 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 7 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0483 | 0.0020 | mg/kg wet | 0.05000 | | 97 | 70-130 | 1 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| 1,1,2-Trichloroethane | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 3 | 20 | |
| 1,1-Dichloroethane | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 6 | 20 | |
| 1,1-Dichloroethene | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 6 | 20 | |
| 1,1-Dichloropropene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 6 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.9 | 20 | |
| 1,2,3-Trichloropropane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.4 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 1 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 4 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 20 | |
| 1,2-Dibromoethane | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 5 | 20 | |
| 1,2-Dichlorobenzene | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| 1,2-Dichloroethane | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| 1,2-Dichloropropane | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| 1,3-Dichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 1 | 20 | |
| 1,3-Dichloropropane | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 4 | 20 | |
| 1,4-Dichlorobenzene | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 6 | 20 | |
| 1,4-Dioxane | 0.939 | 0.100 | mg/kg wet | 1.000 | | 94 | 70-130 | 4 | 20 | |
| 2,2-Dichloropropane | 0.0560 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | 6 | 20 | |
| 2-Butanone | 0.247 | 0.0100 | mg/kg wet | 0.2500 | | 99 | 70-130 | 1 | 20 | |
| 2-Chlorotoluene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 5 | 20 | |
| 2-Hexanone | 0.204 | 0.0100 | mg/kg wet | 0.2500 | | 82 | 70-130 | 0.6 | 20 | |
| 4-Chlorotoluene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 3 | 20 | |
| 4-Isopropyltoluene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| 4-Methyl-2-Pentanone | 0.218 | 0.0100 | mg/kg wet | 0.2500 | | 87 | 70-130 | 2 | 20 | |
| Acetone | 0.246 | 0.0100 | mg/kg wet | 0.2500 | | 98 | 70-130 | 1 | 20 | |
| Benzene | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| Bromobenzene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| Bromochloromethane | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| Bromodichloromethane | 0.0570 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 5 | 20 | |
| Bromoform | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 3 | 20 | |
| Bromomethane | 0.0500 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 7 | 20 | |
| Carbon Disulfide | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| Carbon Tetrachloride | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 7 | 20 | |
| Chlorobenzene | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 6 | 20 | |
| Chloroethane | 0.0500 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 6 | 20 | |
| Chloroform | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| Chloromethane | 0.0536 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 3 | 20 | |
| cis-1,2-Dichloroethene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| cis-1,3-Dichloropropene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| Dibromochloromethane | 0.0480 | 0.0020 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |
| Dibromomethane | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 4 | 20 | |
| Dichlorodifluoromethane | 0.0504 | 0.0100 | mg/kg wet | 0.05000 | | 101 | 70-130 | 7 | 20 | |
| Diethyl Ether | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| Di-isopropyl ether | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| Ethyl tertiary-butyl ether | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Ethylbenzene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 6 | 20 | |
| Hexachlorobutadiene | 0.0563 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 4 | 20 | |
| Isopropylbenzene | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| Methyl tert-Butyl Ether | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 0.8 | 20 | |
| Methylene Chloride | 0.0502 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| Naphthalene | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 1 | 20 | |
| n-Butylbenzene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| n-Propylbenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| sec-Butylbenzene | 0.0414 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | 4 | 20 | |
| Styrene | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| tert-Butylbenzene | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| Tertiary-amyl methyl ether | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 0.6 | 20 | |
| Tetrachloroethene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 7 | 20 | |
| Tetrahydrofuran | 0.0421 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | 4 | 20 | |
| Toluene | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| trans-1,2-Dichloroethene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 4 | 20 | |
| trans-1,3-Dichloropropene | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 20 | |
| Trichloroethene | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 5 | 20 | |
| Trichlorofluoromethane | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 7 | 20 | |
| Vinyl Chloride | 0.0533 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 6 | 20 | |
| Xylene O | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 7 | 20 | |
| Xylene P,M | 0.0975 | 0.0100 | mg/kg wet | 0.1000 | | 97 | 70-130 | 6 | 20 | |
| Xylenes (Total) | 0.147 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0545* | | mg/kg wet | *0.05000* | | *109* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0501* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0529* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0483* | | mg/kg wet | *0.05000* | | *97* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Chlordane (Total) | ND | 0.0200 | mg/kg wet | | | | | | | |
| Chlordane (Total) [2C] | ND | 0.0200 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0112* | | mg/kg wet | *0.01250* | | *90* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0118* | | mg/kg wet | *0.01250* | | *94* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00905* | | mg/kg wet | *0.01250* | | *72* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0101* | | mg/kg wet | *0.01250* | | *81* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| 4,4´-DDE | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| 4,4´-DDT | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Aldrin | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 67 | 40-140 | | | |
| Aldrin [2C] | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| alpha-BHC | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| alpha-BHC [2C] | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| alpha-Chlordane | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| beta-BHC | 0.0086 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | | | |
| beta-BHC [2C] | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| delta-BHC | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| delta-BHC [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| Dieldrin [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan I | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| Endosulfan I [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Endosulfan II | 0.0086 | 0.0025 | mg/kg wet | 0.01250 | | 68 | 40-140 | | | |
| Endosulfan II [2C] | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| Endosulfan Sulfate | 0.0087 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Endrin | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| Endrin [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Endrin Ketone | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0089 | 0.0015 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0100 | 0.0015 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| gamma-Chlordane | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Heptachlor | 0.0080 | 0.0025 | mg/kg wet | 0.01250 | | 64 | 40-140 | | | |
| Heptachlor [2C] | 0.0078 | 0.0025 | mg/kg wet | 0.01250 | | 62 | 40-140 | | | |
| Heptachlor Epoxide | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Hexachlorobenzene | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Methoxychlor | 0.0084 | 0.0025 | mg/kg wet | 0.01250 | | 67 | 40-140 | | | |
| Methoxychlor [2C] | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 66 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0121* | | mg/kg wet | *0.01250* | | *97* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0128* | | mg/kg wet | *0.01250* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00967* | | mg/kg wet | *0.01250* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0105* | | mg/kg wet | *0.01250* | | *84* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 6 | 30 | |
| 4,4´-DDD [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 9 | 30 | |
| 4,4´-DDE | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 5 | 30 | |
| 4,4´-DDE [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 8 | 30 | |
| 4,4´-DDT | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 3 | 30 | |
| 4,4´-DDT [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 7 | 30 | |
| Aldrin | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | 7 | 30 | |
| Aldrin [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 9 | 30 | |
| alpha-BHC | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 8 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| alpha-BHC [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 10 | 30 | |
| alpha-Chlordane | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 6 | 30 | |
| alpha-Chlordane [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 9 | 30 | |
| beta-BHC | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 7 | 30 | |
| beta-BHC [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 8 | 30 | |
| delta-BHC | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 8 | 30 | |
| delta-BHC [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 9 | 30 | |
| Dieldrin | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| Dieldrin [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 8 | 30 | |
| Endosulfan I | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 6 | 30 | |
| Endosulfan I [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 9 | 30 | |
| Endosulfan II | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | 6 | 30 | |
| Endosulfan II [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 9 | 30 | |
| Endosulfan Sulfate | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | 6 | 30 | |
| Endosulfan Sulfate [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 9 | 30 | |
| Endrin | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 5 | 30 | |
| Endrin [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 8 | 30 | |
| Endrin Ketone | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 7 | 30 | |
| Endrin Ketone [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 9 | 30 | |
| gamma-BHC (Lindane) | 0.0097 | 0.0015 | mg/kg wet | 0.01250 | | 78 | 40-140 | 9 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0110 | 0.0015 | mg/kg wet | 0.01250 | | 88 | 40-140 | 10 | 30 | |
| gamma-Chlordane | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 6 | 30 | |
| gamma-Chlordane [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 9 | 30 | |
| Heptachlor | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 66 | 40-140 | 4 | 30 | |
| Heptachlor [2C] | 0.0081 | 0.0025 | mg/kg wet | 0.01250 | | 65 | 40-140 | 4 | 30 | |
| Heptachlor Epoxide | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 7 | 30 | |
| Heptachlor Epoxide [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 9 | 30 | |
| Hexachlorobenzene | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 7 | 30 | |
| Hexachlorobenzene [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | 9 | 30 | |
| Methoxychlor | 0.0087 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | 3 | 30 | |
| Methoxychlor [2C] | 0.0088 | 0.0025 | mg/kg wet | 0.01250 | | 70 | 40-140 | 6 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0126* | | mg/kg wet | *0.01250* | | *101* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0136* | | mg/kg wet | *0.01250* | | *108* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00999* | | mg/kg wet | *0.01250* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0110* | | mg/kg wet | *0.01250* | | *88* | *30-150* | | | |
| **Batch CL71351 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71351 - 3546** | | | | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Chlordane (Total) | ND | 0.0200 | mg/kg wet | | | | | | | |
| Chlordane (Total) [2C] | ND | 0.0200 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0141* | | mg/kg wet | *0.01250* | | *113* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0142* | | mg/kg wet | *0.01250* | | *113* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0115* | | mg/kg wet | *0.01250* | | *92* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0118* | | mg/kg wet | *0.01250* | | *94* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | | | |
| 4,4´-DDE | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71351 - 3546** | | | | | | | | | | |
| 4,4´-DDT | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Aldrin | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Aldrin [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| alpha-BHC | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| alpha-BHC [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| alpha-Chlordane | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| beta-BHC | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| beta-BHC [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| delta-BHC | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| delta-BHC [2C] | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| Dieldrin | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| Dieldrin [2C] | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | | | |
| Endosulfan I | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| Endosulfan I [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| Endosulfan II | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan II [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endosulfan Sulfate | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Endrin | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Endrin [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | | | |
| Endrin Ketone | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0111 | 0.0015 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0118 | 0.0015 | mg/kg wet | 0.01250 | | 95 | 40-140 | | | |
| gamma-Chlordane | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | | | |
| Heptachlor | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| Heptachlor [2C] | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 67 | 40-140 | | | |
| Heptachlor Epoxide | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| Hexachlorobenzene | 0.0138 | 0.0025 | mg/kg wet | 0.01250 | | 110 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0128 | 0.0025 | mg/kg wet | 0.01250 | | 102 | 40-140 | | | |
| Methoxychlor | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| Methoxychlor [2C] | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0147* | | mg/kg wet | *0.01250* | | *118* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0149* | | mg/kg wet | *0.01250* | | *119* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0119* | | mg/kg wet | *0.01250* | | *95* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0124* | | mg/kg wet | *0.01250* | | *99* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 5 | 30 | |
| 4,4´-DDD [2C] | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 6 | 30 | |
| 4,4´-DDE | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71351 - 3546** | | | | | | | | | | |
| 4,4´-DDE [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 8 | 30 | |
| 4,4´-DDT | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 1 | 30 | |
| 4,4´-DDT [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 3 | 30 | |
| Aldrin | 0.0070 | 0.0025 | mg/kg wet | 0.01250 | | 56 | 40-140 | 38 | 30 | D+ |
| Aldrin [2C] | 0.0074 | 0.0025 | mg/kg wet | 0.01250 | | 59 | 40-140 | 38 | 30 | D+ |
| alpha-BHC | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | 4 | 30 | |
| alpha-BHC [2C] | 0.0127 | 0.0025 | mg/kg wet | 0.01250 | | 102 | 40-140 | 5 | 30 | |
| alpha-Chlordane | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 4 | 30 | |
| alpha-Chlordane [2C] | 0.0121 | 0.0025 | mg/kg wet | 0.01250 | | 97 | 40-140 | 7 | 30 | |
| beta-BHC | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 3 | 30 | |
| beta-BHC [2C] | 0.0115 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 6 | 30 | |
| delta-BHC | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 5 | 30 | |
| delta-BHC [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 7 | 30 | |
| Dieldrin | 0.0121 | 0.0025 | mg/kg wet | 0.01250 | | 97 | 40-140 | 4 | 30 | |
| Dieldrin [2C] | 0.0129 | 0.0025 | mg/kg wet | 0.01250 | | 103 | 40-140 | 5 | 30 | |
| Endosulfan I | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 3 | 30 | |
| Endosulfan I [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 6 | 30 | |
| Endosulfan II | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 3 | 30 | |
| Endosulfan II [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 3 | 30 | |
| Endosulfan Sulfate | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 3 | 30 | |
| Endosulfan Sulfate [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 4 | 30 | |
| Endrin | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 3 | 30 | |
| Endrin [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 3 | 30 | |
| Endrin Ketone | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 3 | 30 | |
| Endrin Ketone [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 1 | 30 | |
| gamma-BHC (Lindane) | 0.0115 | 0.0015 | mg/kg wet | 0.01250 | | 92 | 40-140 | 4 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0125 | 0.0015 | mg/kg wet | 0.01250 | | 100 | 40-140 | 5 | 30 | |
| gamma-Chlordane | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 5 | 30 | |
| gamma-Chlordane [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 7 | 30 | |
| Heptachlor | 0.0071 | 0.0025 | mg/kg wet | 0.01250 | | 57 | 40-140 | 22 | 30 | |
| Heptachlor [2C] | 0.0068 | 0.0025 | mg/kg wet | 0.01250 | | 54 | 40-140 | 20 | 30 | |
| Heptachlor Epoxide | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | 4 | 30 | |
| Heptachlor Epoxide [2C] | 0.0127 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| Hexachlorobenzene | 0.0143 | 0.0025 | mg/kg wet | 0.01250 | | 115 | 40-140 | 4 | 30 | |
| Hexachlorobenzene [2C] | 0.0134 | 0.0025 | mg/kg wet | 0.01250 | | 108 | 40-140 | 5 | 30 | |
| Methoxychlor | 0.0058 | 0.0025 | mg/kg wet | 0.01250 | | 47 | 40-140 | 43 | 30 | D+ |
| Methoxychlor [2C] | 0.0056 | 0.0025 | mg/kg wet | 0.01250 | | 45 | 40-140 | 46 | 30 | D+ |
| *Surrogate: Decachlorobiphenyl* | *0.0150* | | mg/kg wet | *0.01250* | | *120* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0155* | | mg/kg wet | *0.01250* | | *124* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0120* | | mg/kg wet | *0.01250* | | *96* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0125* | | mg/kg wet | *0.01250* | | *100* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71113 - 3540C** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CL71113 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0249* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0262* | | mg/kg wet | *0.02500* | | *105* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0218* | | mg/kg wet | *0.02500* | | *87* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0247* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 104 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.6 | 0.05 | mg/kg wet | 0.5000 | | 114 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 105 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0269* | | mg/kg wet | *0.02500* | | *108* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0281* | | mg/kg wet | *0.02500* | | *112* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0230* | | mg/kg wet | *0.02500* | | *92* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0245* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 102 | 40-140 | 2 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 108 | 40-140 | 6 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 100 | 40-140 | 1 | 30 | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | 4 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0265* | | mg/kg wet | *0.02500* | | *106* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0256* | | mg/kg wet | *0.02500* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0223* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0232* | | mg/kg wet | *0.02500* | | *93* | *30-150* | | | |
| **Batch CL71114 - 3540C** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082A Polychlorinated Biphenyls (PCB) | | | | | | | | | | |
| **Batch CL71114 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0191* | | mg/kg wet | *0.02500* | | *76* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0206* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0165* | | mg/kg wet | *0.02500* | | *66* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0190* | | mg/kg wet | *0.02500* | | *76* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 94 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 99 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0244* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0247* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0223* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0222* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 95 | 40-140 | 2 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | 2 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 104 | 40-140 | 3 | 30 | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 94 | 40-140 | 2 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0243* | | mg/kg wet | *0.02500* | | *97* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0250* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0215* | | mg/kg wet | *0.02500* | | *86* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0223* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| 8151A Chlorinated Herbicides | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71832 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.114* | | mg/kg wet | *0.2000* | | *57* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.122* | | mg/kg wet | *0.2000* | | *61* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.011 | 0.010 | mg/kg wet | 0.01900 | | 56 | 40-140 | | | |
| 2,4,5-T [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 62 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.011 | 0.010 | mg/kg wet | 0.01900 | | 60 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 62 | 40-140 | | | |
| 2,4-D | 0.098 | 0.047 | mg/kg wet | 0.1880 | | 52 | 40-140 | | | |
| 2,4-D [2C] | 0.111 | 0.047 | mg/kg wet | 0.1880 | | 59 | 40-140 | | | |
| 2,4-DB | 0.112 | 0.048 | mg/kg wet | 0.1900 | | 59 | 40-140 | | | |
| 2,4-DB [2C] | 0.110 | 0.048 | mg/kg wet | 0.1900 | | 58 | 40-140 | | | |
| Dalapon | 0.210 | 0.046 | mg/kg wet | 0.4550 | | 46 | 40-140 | | | |
| Dalapon [2C] | 0.268 | 0.046 | mg/kg wet | 0.4550 | | 59 | 40-140 | | | |
| Dicamba | 0.011 | 0.009 | mg/kg wet | 0.01880 | | 60 | 40-140 | | | |
| Dicamba [2C] | 0.014 | 0.009 | mg/kg wet | 0.01880 | | 72 | 40-140 | | | |
| Dichlorprop | 0.130 | 0.047 | mg/kg wet | 0.1880 | | 69 | 40-140 | | | |
| Dichlorprop [2C] | 0.123 | 0.047 | mg/kg wet | 0.1880 | | 65 | 40-140 | | | |
| Dinoseb | 0.015 | 0.048 | mg/kg wet | 0.09500 | | 16 | 10-100 | | | |
| Dinoseb [2C] | 0.017 | 0.048 | mg/kg wet | 0.09500 | | 18 | 10-100 | | | |
| MCPA | 12.4 | 2.32 | mg/kg wet | 18.60 | | 67 | 40-140 | | | |
| MCPA [2C] | 13.7 | 2.32 | mg/kg wet | 18.60 | | 73 | 40-140 | | | |
| MCPP | 11.5 | 2.35 | mg/kg wet | 18.80 | | 61 | 40-140 | | | |
| MCPP [2C] | 12.7 | 2.35 | mg/kg wet | 18.80 | | 68 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71832 - 3546** | | | | | | | | | | |
| *Surrogate: DCAA* | *0.138* | | mg/kg wet | *0.2000* | | *69* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.143* | | mg/kg wet | *0.2000* | | *71* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 64 | 40-140 | 13 | 30 | |
| 2,4,5-T [2C] | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 70 | 40-140 | 12 | 30 | |
| 2,4,5-TP (Silvex) | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 66 | 40-140 | 10 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 62 | 40-140 | 0 | 30 | |
| 2,4-D | 0.111 | 0.047 | mg/kg wet | 0.1880 | | 59 | 40-140 | 13 | 30 | |
| 2,4-D [2C] | 0.122 | 0.047 | mg/kg wet | 0.1880 | | 65 | 40-140 | 9 | 30 | |
| 2,4-DB | 0.108 | 0.048 | mg/kg wet | 0.1900 | | 57 | 40-140 | 4 | 30 | |
| 2,4-DB [2C] | 0.102 | 0.048 | mg/kg wet | 0.1900 | | 54 | 40-140 | 8 | 30 | |
| Dalapon | 0.244 | 0.046 | mg/kg wet | 0.4550 | | 54 | 40-140 | 15 | 30 | |
| Dalapon [2C] | 0.315 | 0.046 | mg/kg wet | 0.4550 | | 69 | 40-140 | 16 | 30 | |
| Dicamba | 0.013 | 0.009 | mg/kg wet | 0.01880 | | 70 | 40-140 | 15 | 30 | |
| Dicamba [2C] | 0.015 | 0.009 | mg/kg wet | 0.01880 | | 82 | 40-140 | 13 | 30 | |
| Dichlorprop | 0.149 | 0.047 | mg/kg wet | 0.1880 | | 79 | 40-140 | 13 | 30 | |
| Dichlorprop [2C] | 0.139 | 0.047 | mg/kg wet | 0.1880 | | 74 | 40-140 | 13 | 30 | |
| Dinoseb | 0.024 | 0.048 | mg/kg wet | 0.09500 | | 26 | 10-100 | 46 | 30 | |
| Dinoseb [2C] | 0.019 | 0.048 | mg/kg wet | 0.09500 | | 20 | 10-100 | 8 | 30 | |
| MCPA | 15.6 | 2.32 | mg/kg wet | 18.60 | | 84 | 40-140 | 22 | 30 | |
| MCPA [2C] | 13.6 | 2.32 | mg/kg wet | 18.60 | | 73 | 40-140 | 0.5 | 30 | |
| MCPP | 12.6 | 2.35 | mg/kg wet | 18.80 | | 67 | 40-140 | 8 | 30 | |
| MCPP [2C] | 13.5 | 2.35 | mg/kg wet | 18.80 | | 72 | 40-140 | 6 | 30 | |
| *Surrogate: DCAA* | *0.141* | | mg/kg wet | *0.2000* | | *71* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.144* | | mg/kg wet | *0.2000* | | *72* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71119 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71119 - 3546** | | | | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyridine | ND | 1.67 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71119 - 3546** | | | | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.43* | | mg/kg wet | *3.333* | | *73* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.57* | | mg/kg wet | *5.000* | | *71* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.80* | | mg/kg wet | *5.000* | | *76* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.53* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.50* | | mg/kg wet | *5.000* | | *70* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.52* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.66* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.04* | | mg/kg wet | *3.333* | | *91* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.60 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.58 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| 2,4-Dinitrophenol | 3.74 | 1.67 | mg/kg wet | 3.333 | | 112 | 30-130 | | | |
| 2,4-Dinitrotoluene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| 2-Chloronaphthalene | 2.51 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| 2-Chlorophenol | 2.51 | 0.333 | mg/kg wet | 3.333 | | 75 | 30-130 | | | |
| 2-Methylnaphthalene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 2-Methylphenol | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 30-130 | | | |
| 2-Nitrophenol | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.40 | 0.667 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| 3+4-Methylphenol | 5.26 | 0.667 | mg/kg wet | 6.667 | | 79 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| 4-Chloroaniline | 2.00 | 0.667 | mg/kg wet | 3.333 | | 60 | 40-140 | | | |
| 4-Nitrophenol | 2.70 | 1.67 | mg/kg wet | 3.333 | | 81 | 30-130 | | | |
| Acenaphthene | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Acenaphthylene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Acetophenone | 2.48 | 0.667 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| Aniline | 1.60 | 1.67 | mg/kg wet | 3.333 | | 48 | 40-140 | | | |
| Anthracene | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Azobenzene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| Benzo(a)anthracene | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Benzo(a)pyrene | 2.92 | 0.167 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.32 | 0.333 | mg/kg wet | 3.333 | | 100 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.49 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.27 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71119 - 3546** | | | | | | | | | | |
| Butylbenzylphthalate | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Chrysene | 2.97 | 0.167 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.27 | 0.167 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Dibenzofuran | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Diethylphthalate | 3.05 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Dimethylphthalate | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Di-n-butylphthalate | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |
| Di-n-octylphthalate | 3.38 | 0.333 | mg/kg wet | 3.333 | | 102 | 40-140 | | | |
| Fluoranthene | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Fluorene | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Hexachlorobenzene | 3.15 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Hexachlorobutadiene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Hexachloroethane | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.28 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Isophorone | 2.26 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| Naphthalene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Nitrobenzene | 2.60 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.85 | 0.333 | mg/kg wet | 3.333 | | 56 | 40-140 | | | |
| Pentachlorophenol | 3.29 | 1.67 | mg/kg wet | 3.333 | | 99 | 30-130 | | | |
| Phenanthrene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Phenol | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 30-130 | | | |
| Pyrene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Pyridine | 1.75 | 1.67 | mg/kg wet | 3.333 | | 52 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.52* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.05* | | mg/kg wet | *5.000* | | *101* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.96* | | mg/kg wet | *5.000* | | *79* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.79* | | mg/kg wet | *3.333* | | *84* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.60* | | mg/kg wet | *5.000* | | *72* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.68* | | mg/kg wet | *3.333* | | *80* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.78* | | mg/kg wet | *5.000* | | *76* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.99* | | mg/kg wet | *3.333* | | *90* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 0.9 | 30 | |
| 1,2-Dichlorobenzene | 2.55 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 2 | 30 | |
| 1,3-Dichlorobenzene | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 2 | 30 | |
| 1,4-Dichlorobenzene | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 1 | 30 | |
| 2,4,5-Trichlorophenol | 3.25 | 0.333 | mg/kg wet | 3.333 | | 97 | 30-130 | 0.3 | 30 | |
| 2,4,6-Trichlorophenol | 3.27 | 0.333 | mg/kg wet | 3.333 | | 98 | 30-130 | 2 | 30 | |
| 2,4-Dichlorophenol | 2.93 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | 1 | 30 | |
| 2,4-Dimethylphenol | 2.65 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | 0.8 | 30 | |
| 2,4-Dinitrophenol | 3.70 | 1.67 | mg/kg wet | 3.333 | | 111 | 30-130 | 1 | 30 | |
| 2,4-Dinitrotoluene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 3 | 30 | |
| 2,6-Dinitrotoluene | 2.85 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 0.9 | 30 | |
| 2-Chloronaphthalene | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 0.8 | 30 | |
| 2-Chlorophenol | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 30-130 | 1 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71119 - 3546** | | | | | | | | | | |
| 2-Methylnaphthalene | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 1 | 30 | |
| 2-Methylphenol | 2.55 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | 15 | 30 | |
| 2-Nitrophenol | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 30-130 | 0.2 | 30 | |
| 3,3´-Dichlorobenzidine | 2.28 | 0.667 | mg/kg wet | 3.333 | | 69 | 40-140 | 5 | 30 | |
| 3+4-Methylphenol | 5.16 | 0.667 | mg/kg wet | 6.667 | | 77 | 30-130 | 2 | 30 | |
| 4-Bromophenyl-phenylether | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 2 | 30 | |
| 4-Chloroaniline | 1.83 | 0.667 | mg/kg wet | 3.333 | | 55 | 40-140 | 9 | 30 | |
| 4-Nitrophenol | 2.61 | 1.67 | mg/kg wet | 3.333 | | 78 | 30-130 | 3 | 30 | |
| Acenaphthene | 2.76 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 0.01 | 30 | |
| Acenaphthylene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 0.2 | 30 | |
| Acetophenone | 2.43 | 0.667 | mg/kg wet | 3.333 | | 73 | 40-140 | 2 | 30 | |
| Aniline | 1.48 | 1.67 | mg/kg wet | 3.333 | | 44 | 40-140 | 8 | 30 | |
| Anthracene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.3 | 30 | |
| Azobenzene | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 4 | 30 | |
| Benzo(a)anthracene | 2.75 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 0.7 | 30 | |
| Benzo(a)pyrene | 2.88 | 0.167 | mg/kg wet | 3.333 | | 86 | 40-140 | 2 | 30 | |
| Benzo(b)fluoranthene | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 0.6 | 30 | |
| Benzo(g,h,i)perylene | 3.30 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 0.4 | 30 | |
| Benzo(k)fluoranthene | 2.92 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 2 | 30 | |
| bis(2-Chloroethoxy)methane | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 1 | 30 | |
| bis(2-Chloroethyl)ether | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 1 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 2 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.32 | 0.333 | mg/kg wet | 3.333 | | 100 | 40-140 | 1 | 30 | |
| Butylbenzylphthalate | 3.10 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.9 | 30 | |
| Chrysene | 2.99 | 0.167 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.6 | 30 | |
| Dibenzo(a,h)Anthracene | 3.25 | 0.167 | mg/kg wet | 3.333 | | 97 | 40-140 | 0.8 | 30 | |
| Dibenzofuran | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 3 | 30 | |
| Diethylphthalate | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 2 | 30 | |
| Dimethylphthalate | 2.93 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 0.1 | 30 | |
| Di-n-butylphthalate | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 0.8 | 30 | |
| Di-n-octylphthalate | 3.39 | 0.333 | mg/kg wet | 3.333 | | 102 | 40-140 | 0.1 | 30 | |
| Fluoranthene | 3.18 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 0.2 | 30 | |
| Fluorene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 2 | 30 | |
| Hexachlorobenzene | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 2 | 30 | |
| Hexachlorobutadiene | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 0.4 | 30 | |
| Hexachloroethane | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 2 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.25 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 0.7 | 30 | |
| Isophorone | 2.26 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 0.07 | 30 | |
| Naphthalene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 0.7 | 30 | |
| Nitrobenzene | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 1 | 30 | |
| N-Nitrosodimethylamine | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 18 | 30 | |
| Pentachlorophenol | 3.55 | 1.67 | mg/kg wet | 3.333 | | 107 | 30-130 | 8 | 30 | |
| Phenanthrene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 0.6 | 30 | |
| Phenol | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | 4 | 30 | |
| Pyrene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 1 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71119 - 3546** | | | | | | | | | | |
| Pyridine | 1.65 | 1.67 | mg/kg wet | 3.333 | | 50 | 40-140 | 6 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.45* | | mg/kg wet | *3.333* | | *74* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.10* | | mg/kg wet | *5.000* | | *102* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.85* | | mg/kg wet | *5.000* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.81* | | mg/kg wet | *3.333* | | *84* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.50* | | mg/kg wet | *5.000* | | *70* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.64* | | mg/kg wet | *3.333* | | *79* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.66* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.01* | | mg/kg wet | *3.333* | | *90* | *30-130* | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.40* | | mg/kg wet | *3.333* | | *72* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.53* | | mg/kg wet | *5.000* | | *71* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.64* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.52* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.34* | | mg/kg wet | *5.000* | | *67* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.47* | | mg/kg wet | *3.333* | | *74* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.47* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.03* | | mg/kg wet | *3.333* | | *91* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.47 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.47 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 2.81 | 0.333 | mg/kg wet | 3.333 | | 84 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.85 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.76 | 1.67 | mg/kg wet | 3.333 | | 83 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| 2-Chloronaphthalene | 2.25 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| 2-Chlorophenol | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | | | |
| 2-Methylnaphthalene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| 2-Methylphenol | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2-Nitrophenol | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.47 | 0.667 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 3+4-Methylphenol | 5.12 | 0.667 | mg/kg wet | 6.667 | | 77 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| 4-Chloroaniline | 1.95 | 0.667 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| 4-Nitrophenol | 2.50 | 1.67 | mg/kg wet | 3.333 | | 75 | 30-130 | | | |
| Acenaphthene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| Acenaphthylene | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| Acetophenone | 2.35 | 0.667 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| Aniline | 1.50 | 1.67 | mg/kg wet | 3.333 | | 45 | 40-140 | | | |
| Anthracene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Azobenzene | 2.23 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| Benzo(a)anthracene | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Benzo(a)pyrene | 2.77 | 0.167 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.23 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 2.20 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.38 | 0.333 | mg/kg wet | 3.333 | | 101 | 40-140 | | | |
| Butylbenzylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Chrysene | 2.93 | 0.167 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.27 | 0.167 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Dibenzofuran | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Diethylphthalate | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Dimethylphthalate | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Di-n-butylphthalate | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Di-n-octylphthalate | 3.38 | 0.333 | mg/kg wet | 3.333 | | 102 | 40-140 | | | |
| Fluoranthene | 3.05 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Fluorene | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Hexachlorobenzene | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Hexachlorobutadiene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Hexachloroethane | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.27 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Isophorone | 2.18 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Naphthalene | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Nitrobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.85 | 0.333 | mg/kg wet | 3.333 | | 56 | 40-140 | | | |
| Pentachlorophenol | 3.02 | 1.67 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| Phenanthrene | 2.74 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Phenol | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 30-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| Pyrene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.49* | | mg/kg wet | *3.333* | | *75* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.96* | | mg/kg wet | *5.000* | | *99* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.86* | | mg/kg wet | *5.000* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.56* | | mg/kg wet | *3.333* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.47* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.60* | | mg/kg wet | *3.333* | | *78* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.65* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.12* | | mg/kg wet | *3.333* | | *94* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 2 | 30 | |
| 1,2-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| 1,3-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| 1,4-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 4 | 30 | |
| 2,4,5-Trichlorophenol | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 30-130 | 1 | 30 | |
| 2,4,6-Trichlorophenol | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | 2 | 30 | |
| 2,4-Dichlorophenol | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 30-130 | 6 | 30 | |
| 2,4-Dimethylphenol | 2.55 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | 0.4 | 30 | |
| 2,4-Dinitrophenol | 2.68 | 1.67 | mg/kg wet | 3.333 | | 80 | 30-130 | 3 | 30 | |
| 2,4-Dinitrotoluene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 6 | 30 | |
| 2,6-Dinitrotoluene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 3 | 30 | |
| 2-Chloronaphthalene | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 1 | 30 | |
| 2-Chlorophenol | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 30-130 | 3 | 30 | |
| 2-Methylnaphthalene | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | 5 | 30 | |
| 2-Methylphenol | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 30-130 | 1 | 30 | |
| 2-Nitrophenol | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | 3 | 30 | |
| 3,3´-Dichlorobenzidine | 2.44 | 0.667 | mg/kg wet | 3.333 | | 73 | 40-140 | 0.9 | 30 | |
| 3+4-Methylphenol | 4.82 | 0.667 | mg/kg wet | 6.667 | | 72 | 30-130 | 6 | 30 | |
| 4-Bromophenyl-phenylether | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 0.6 | 30 | |
| 4-Chloroaniline | 1.84 | 0.667 | mg/kg wet | 3.333 | | 55 | 40-140 | 6 | 30 | |
| 4-Nitrophenol | 2.39 | 1.67 | mg/kg wet | 3.333 | | 72 | 30-130 | 5 | 30 | |
| Acenaphthene | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 4 | 30 | |
| Acenaphthylene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| Acetophenone | 2.24 | 0.667 | mg/kg wet | 3.333 | | 67 | 40-140 | 5 | 30 | |
| Aniline | 1.41 | 1.67 | mg/kg wet | 3.333 | | 42 | 40-140 | 6 | 30 | |
| Anthracene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 2 | 30 | |
| Azobenzene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 1 | 30 | |
| Benzo(a)anthracene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 1 | 30 | |
| Benzo(a)pyrene | 2.75 | 0.167 | mg/kg wet | 3.333 | | 82 | 40-140 | 0.6 | 30 | |
| Benzo(b)fluoranthene | 2.58 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 0.6 | 30 | |
| Benzo(g,h,i)perylene | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 0.3 | 30 | |
| Benzo(k)fluoranthene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 0.7 | 30 | |
| bis(2-Chloroethoxy)methane | 2.30 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 4 | 30 | |
| bis(2-Chloroethyl)ether | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 3 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 2 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| bis(2-Ethylhexyl)phthalate | 3.29 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 3 | 30 | |
| Butylbenzylphthalate | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 7 | 30 | |
| Chrysene | 2.88 | 0.167 | mg/kg wet | 3.333 | | 87 | 40-140 | 2 | 30 | |
| Dibenzo(a,h)Anthracene | 3.23 | 0.167 | mg/kg wet | 3.333 | | 97 | 40-140 | 1 | 30 | |
| Dibenzofuran | 2.44 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 4 | 30 | |
| Diethylphthalate | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 5 | 30 | |
| Dimethylphthalate | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 4 | 30 | |
| Di-n-butylphthalate | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 3 | 30 | |
| Di-n-octylphthalate | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 6 | 30 | |
| Fluoranthene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 3 | 30 | |
| Fluorene | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 3 | 30 | |
| Hexachlorobenzene | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 1 | 30 | |
| Hexachlorobutadiene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 2 | 30 | |
| Hexachloroethane | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 3 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 1 | 30 | |
| Isophorone | 2.13 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 2 | 30 | |
| Naphthalene | 2.44 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 4 | 30 | |
| Nitrobenzene | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 0.4 | 30 | |
| N-Nitrosodimethylamine | 1.74 | 0.333 | mg/kg wet | 3.333 | | 52 | 40-140 | 6 | 30 | |
| Pentachlorophenol | 3.11 | 1.67 | mg/kg wet | 3.333 | | 93 | 30-130 | 3 | 30 | |
| Phenanthrene | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 2 | 30 | |
| Phenol | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 30-130 | 5 | 30 | |
| Pyrene | 2.74 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 6 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.32* | | mg/kg wet | *3.333* | | *70* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.81* | | mg/kg wet | *5.000* | | *96* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.64* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.57* | | mg/kg wet | *3.333* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.25* | | mg/kg wet | *5.000* | | *65* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.49* | | mg/kg wet | *3.333* | | *75* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.38* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.96* | | mg/kg wet | *3.333* | | *89* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL71536 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 100 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 11200 | 100 | mg/kg | 10000 | | 112 | 80-120 | | | |
| Total Organic Carbon (2) | 10600 | 100 | mg/kg | 10000 | | 106 | 80-120 | | | |
| Total Organic Carbon (Average) | 10900 | 100 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 10900 | 100 | mg/kg | 10000 | | 109 | 80-120 | 3 | 200 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL71536 - General Preparation** | | | | | | | | | | |
| Total Organic Carbon (2) | 10600 | 100 | mg/kg | 10000 | | 106 | 80-120 | 0.8 | 200 | |
| Total Organic Carbon (Average) | 10800 | 100 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.50 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712171

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| Z-08 | See Attached |
| XH | Peaks found in the retention time window for MCPP did not confirm by GC/MS. |
| U | Analyte included in the analysis, but not detected |
| S+ | Surrogate recovery(ies) above upper control limit (S+). |
| RRF | Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD+ | Continuing Calibration %Diff/Drift is above control limit (CD+). |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712171

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

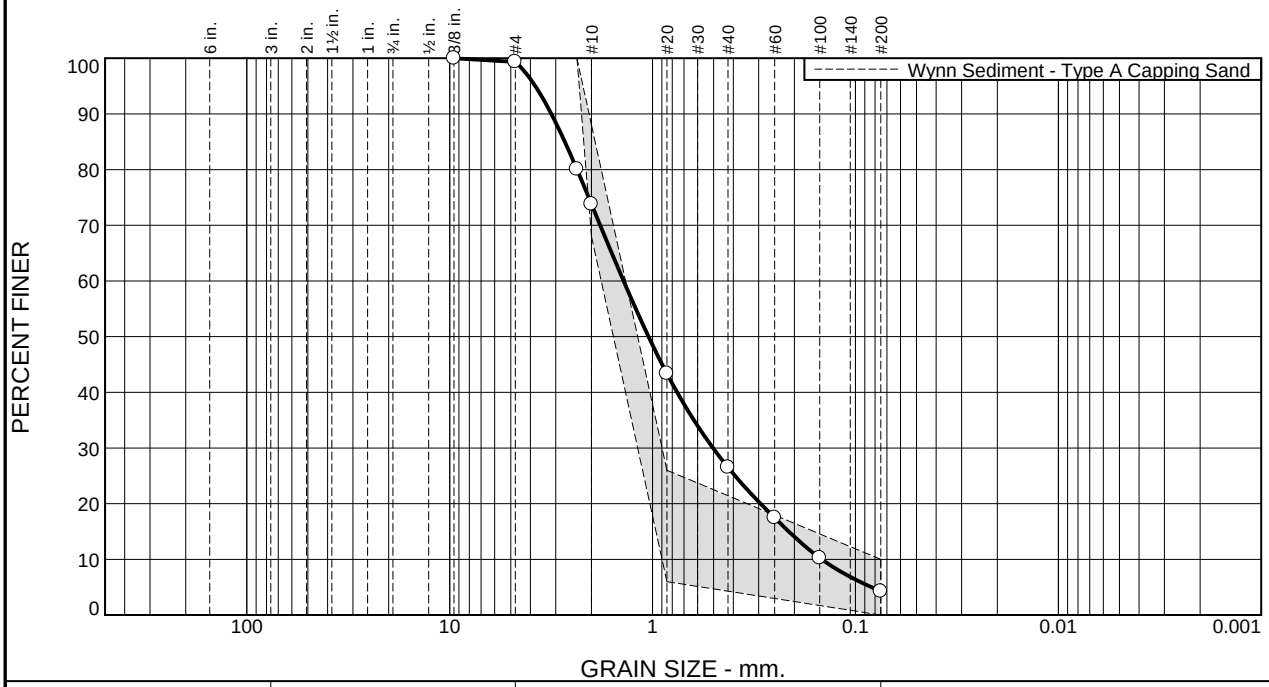
| THIELSCH ENGINEERING | 195 Frances Avenue<br>Cranston RI, 02910<br>Phone: (401)-467-6454<br>Fax: (401)-467-2398<br>http://www.thielsch.com | Client Information:<br>Charter Contracting<br>Boston, MA<br>PM: Marc Levesque<br>Assigned By:<br>Marc Levesque | Laboratory Information<br>Project Name:<br>**Wynn Boston Harbor Sediment Remediation**<br>**Boston, MA**<br>ESS Project Number: 1712171<br>Report Date: 12.07.17 |
|---|---|---|---|

# LABORATORY TESTING DATA SHEET

| Boring ID | ESS Sample No. | Depth (ft) | CTS Laboratory No. | Identification Tests | | | | | | | Density | | Strength Tests | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water Content % | LL % | PL % | Gravel % | Sand % | Fines % | Org. % | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) Corrected | CBR Setup as % of Proctor | CBR Dry unit wt. pcf | CBR Water Content % | CBR @ 0.1" @ 0.2" | Laboratory Log and Soil Description |
| Type A - Capping Sand - 015 | 1712171-01 | Stock | 17-S-1916 | 4.4 | | | 0.7 | 95.1 | 4.2 | | | | | | | | Brown well graded sand (SW) |
| Type A - Capping Sand - 016 | 1712171-02 | Stock | 17-S-1917 | 3.7 | | | 1.9 | 94.6 | 3.5 | | | | | | | | Brown well graded sand (SW) |
| Type A - Capping Sand - 017 | 1712171-03 | Stock | 17-S-1918 | 3.4 | | | 1.8 | 94.5 | 3.7 | | | | | | | | Brown well graded sand (SW) |
| Type A - Capping Sand - 018 | 1712171-04 | Stock | 17-S-1919 | 2.9 | | | 2.1 | 94.6 | 3.3 | | | | | | | | Brown well graded sand (SW) |
| Type A - Capping Sand - 019 | 1712171-05 | Stock | 17-S-1920 | 3.3 | | | 1.3 | 95.1 | 3.6 | | | | | | | | Brown well graded sand (SW) |
| Type C - Capping Sand - 009 | 1712171-06 | Stock | 17-S-1921 | 9.8 | | | 2.7 | 41.7 | 55.6 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 010 | 1712171-07 | Stock | 17-S-1922 | 11.4 | | | 1.0 | 41.9 | 57.1 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 011 | 1712171-08 | Stock | 17-S-1923 | 9.6 | | | 0.9 | 45.5 | 53.6 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 012 | 1712171-09 | Stock | 17-S-1924 | 10.4 | | | 1.0 | 44.6 | 54.4 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 013 | 1712171-10 | Stock | 17-S-1925 | 8.8 | | | 1.2 | 45.3 | 53.5 | | | | | | | | Gray sandy silt (ML) |
| | | | | | | | | | | | | | | | | | |

Reviewed By _____ Date Reviewed: *12.07.17*

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.7 | 25.5 | 47.3 | 22.3 | 4.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.3 | | |
| #8 | 80.1 | 100.0 | X |
| #10 | 73.8 | 68.0 - 88.0 | |
| #20 | 43.4 | 6.0 - 26.0 | X |
| #40 | 26.5 | | |
| #60 | 17.4 | | |
| #100 | 10.2 | | |
| #200 | 4.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.1526 $D_{85}$= 2.7064 $D_{60}$= 1.3895
$D_{50}$= 1.0470 $D_{30}$= 0.5038 $D_{15}$= 0.2131
$D_{10}$= 0.1469 $C_u$= 9.46 $C_c$= 1.24

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

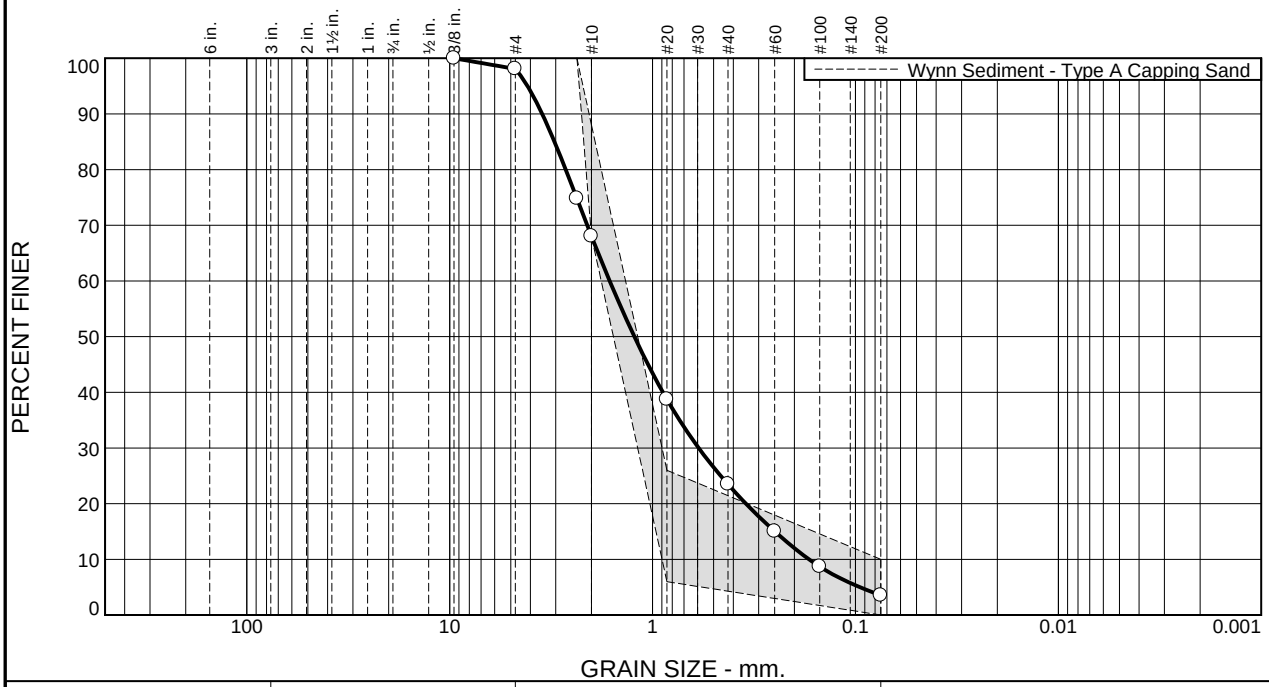
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 015

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.9 | 30.0 | 44.6 | 20.0 | 3.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.1 | | |
| #8 | 74.8 | 100.0 | X |
| #10 | 68.1 | 68.0 - 88.0 | |
| #20 | 38.7 | 6.0 - 26.0 | X |
| #40 | 23.5 | | |
| #60 | 15.0 | | |
| #100 | 8.7 | | |
| #200 | 3.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4985 $D_{85}$= 3.0436 $D_{60}$= 1.6269
$D_{50}$= 1.2292 $D_{30}$= 0.5927 $D_{15}$= 0.2495
$D_{10}$= 0.1696 $C_u$= 9.59 $C_c$= 1.27

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

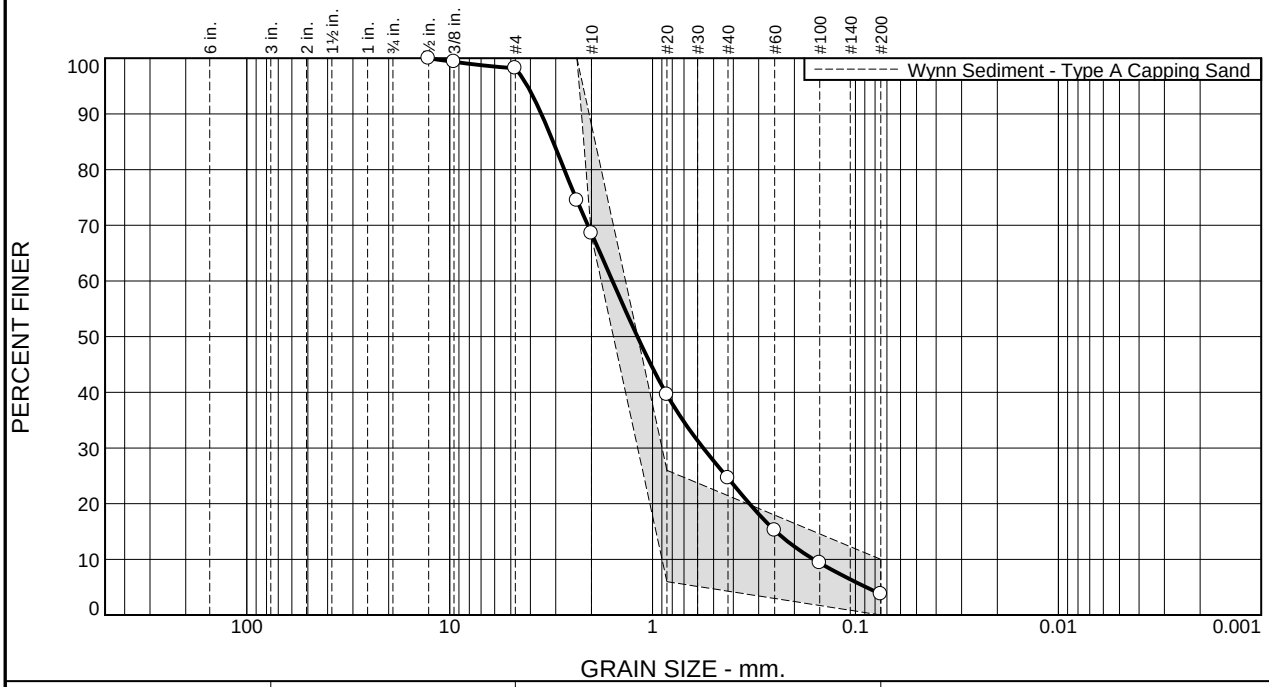
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 016

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.8 | 29.6 | 44.0 | 20.9 | 3.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.3 | | |
| #4 | 98.2 | | |
| #8 | 74.5 | 100.0 | X |
| #10 | 68.6 | 68.0 - 88.0 | |
| #20 | 39.6 | 6.0 - 26.0 | X |
| #40 | 24.6 | | |
| #60 | 15.2 | | |
| #100 | 9.4 | | |
| #200 | 3.7 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5329 $D_{85}$= 3.0911 $D_{60}$= 1.5763
$D_{50}$= 1.1876 $D_{30}$= 0.5626 $D_{15}$= 0.2465
$D_{10}$= 0.1607 $C_u$= 9.81 $C_c$= 1.25

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

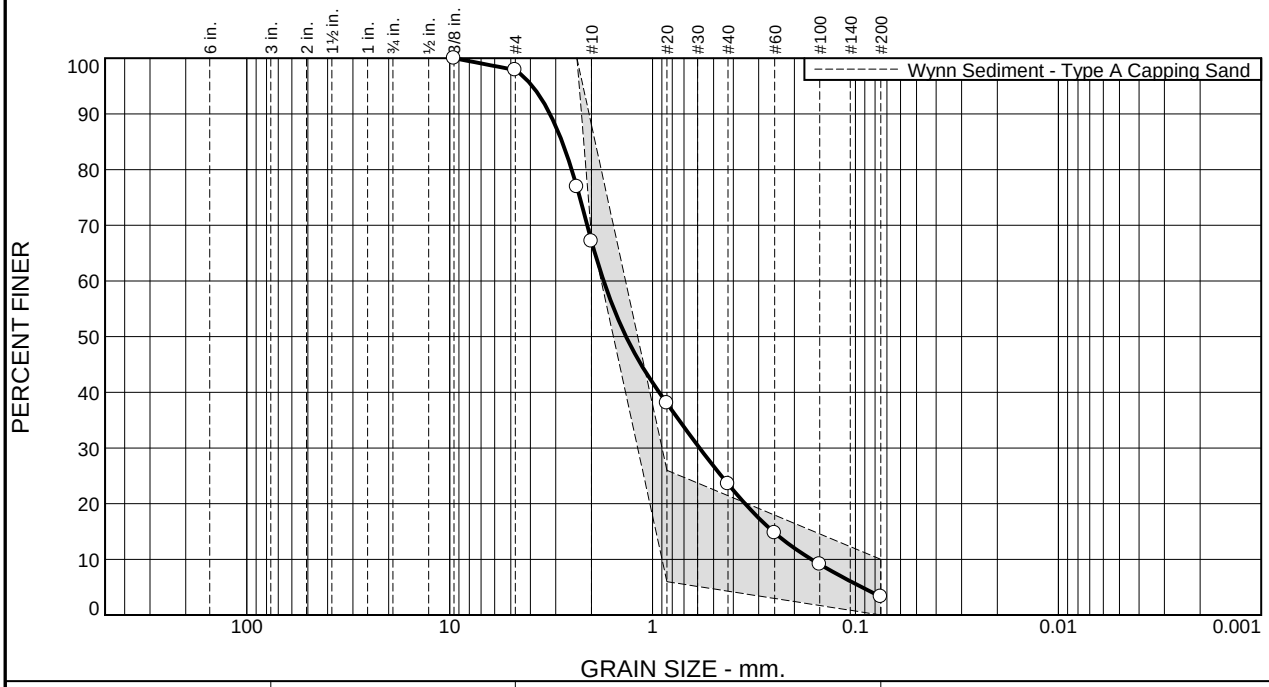
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 017

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.1 | 30.8 | 43.6 | 20.2 | 3.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 97.9 | | |
| #8 | 76.9 | 100.0 | X |
| #10 | 67.1 | 68.0 - 88.0 | X |
| #20 | 38.0 | 6.0 - 26.0 | X |
| #40 | 23.5 | | |
| #60 | 14.8 | | |
| #100 | 9.1 | | |
| #200 | 3.3 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.2036 $D_{85}$= 2.7901 $D_{60}$= 1.7423
$D_{50}$= 1.3511 $D_{30}$= 0.5865 $D_{15}$= 0.2545
$D_{10}$= 0.1648 $C_u$= 10.57 $C_c$= 1.20

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

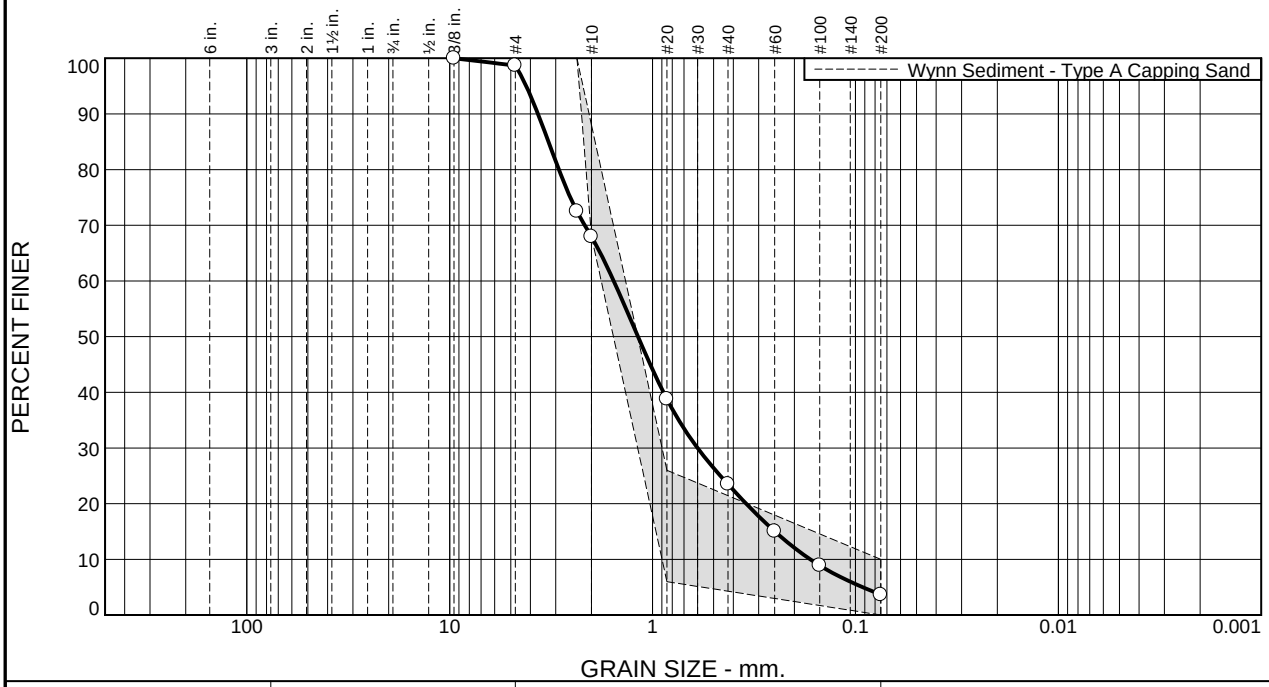
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 018

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.3 | 30.7 | 44.5 | 19.9 | 3.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.7 | | |
| #8 | 72.5 | 100.0 | X |
| #10 | 68.0 | 68.0 - 88.0 | |
| #20 | 38.8 | 6.0 - 26.0 | X |
| #40 | 23.5 | | |
| #60 | 15.0 | | |
| #100 | 8.9 | | |
| #200 | 3.6 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.6712 $D_{85}$= 3.2584 $D_{60}$= 1.5546
$D_{50}$= 1.1799 $D_{30}$= 0.6003 $D_{15}$= 0.2495
$D_{10}$= 0.1671 $C_u$= 9.30 $C_c$= 1.39

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

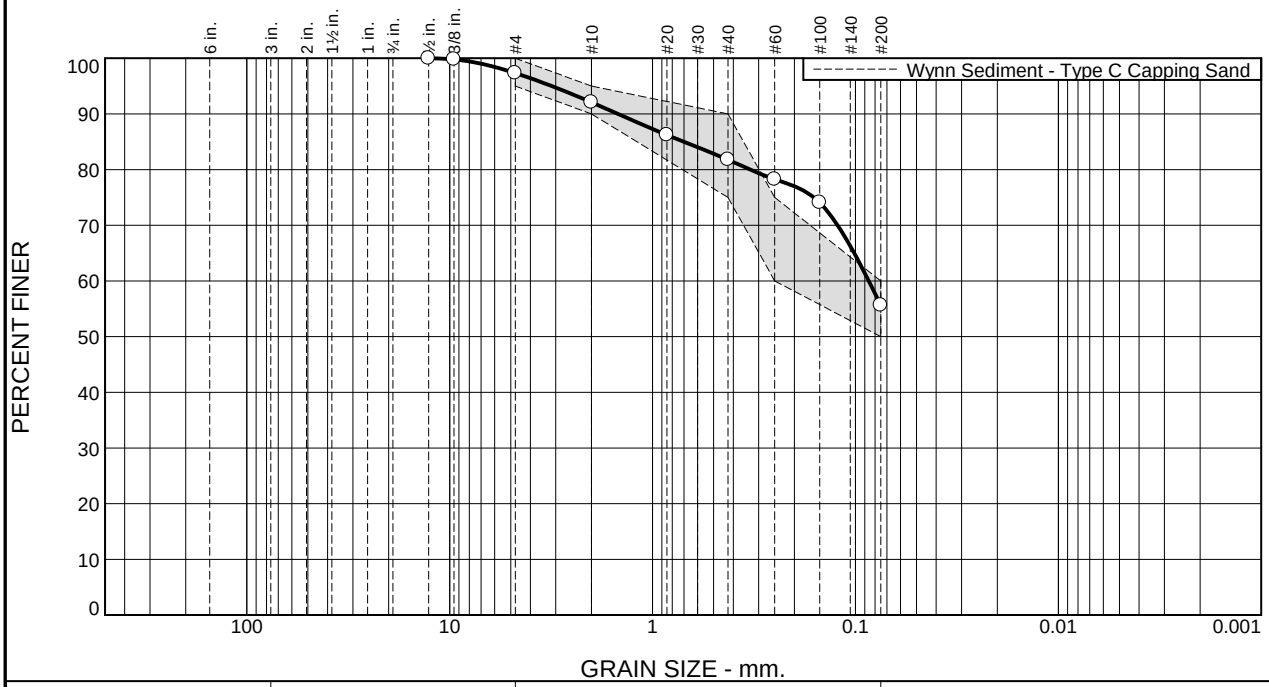
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 019

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.7 | 5.2 | 10.3 | 26.2 | 55.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.8 | | |
| #4 | 97.3 | 95.0 - 100.0 | |
| #10 | 92.1 | 90.0 - 95.0 | |
| #20 | 86.2 | | |
| #40 | 81.8 | 75.0 - 90.0 | |
| #60 | 78.3 | 60.0 - 75.0 | X |
| #100 | 74.1 | | |
| #200 | 55.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4805 $D_{85}$= 0.7022 $D_{60}$= 0.0860
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

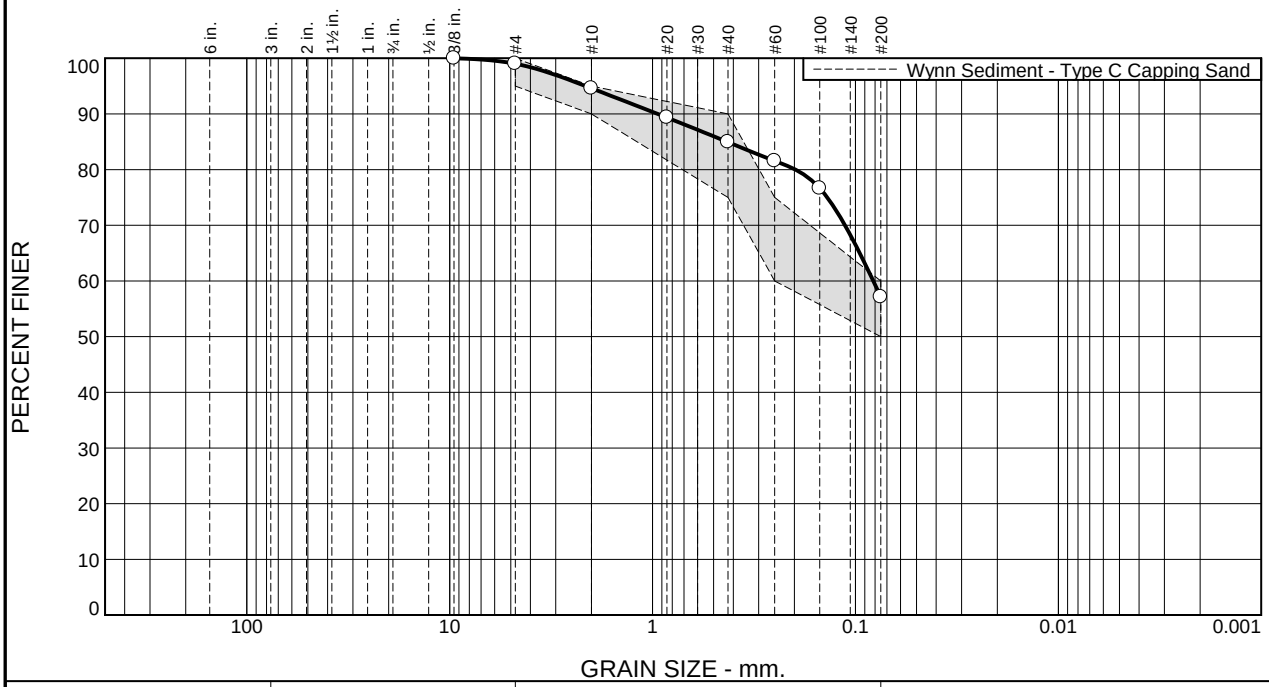
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 009

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 4.4 | 9.7 | 27.8 | 57.1 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.0 | 95.0 - 100.0 | |
| #10 | 94.6 | 90.0 - 95.0 | |
| #20 | 89.4 | | |
| #40 | 84.9 | 75.0 - 90.0 | |
| #60 | 81.6 | 60.0 - 75.0 | X |
| #100 | 76.6 | | |
| #200 | 57.1 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 0.9433 $D_{85}$= 0.4295 $D_{60}$= 0.0817
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

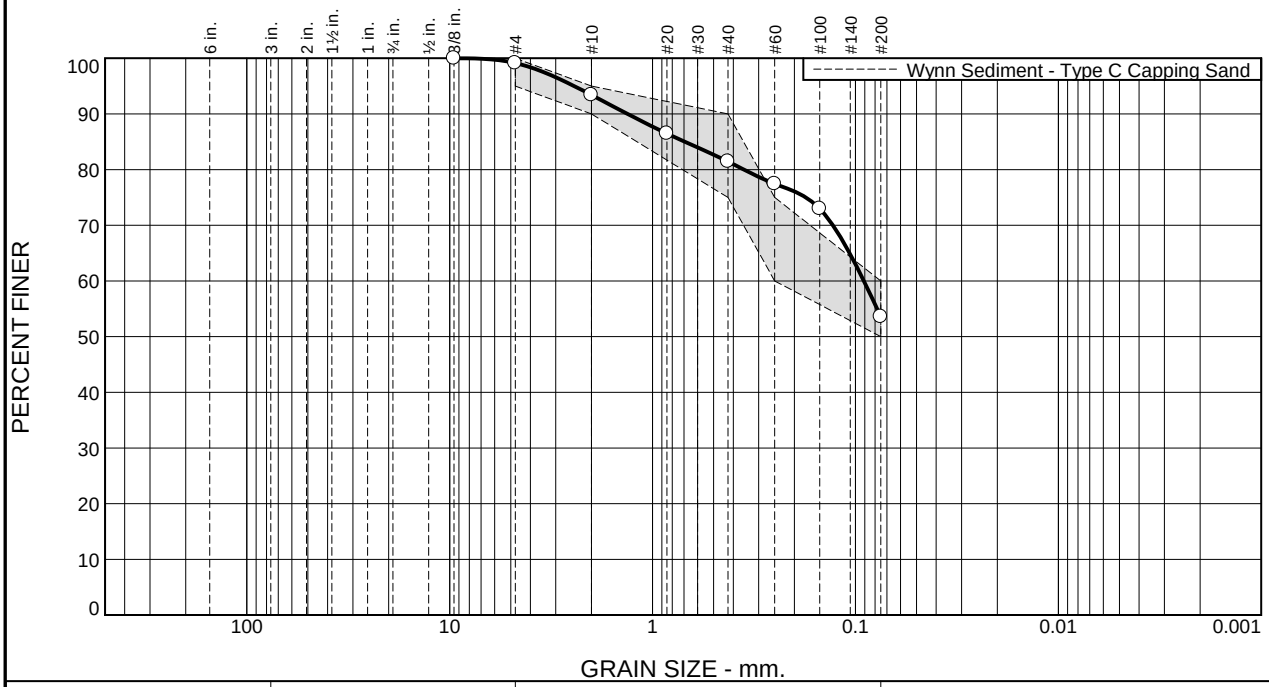
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 010

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.9 | 5.7 | 11.9 | 27.9 | 53.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.1 | 95.0 - 100.0 | |
| #10 | 93.4 | 90.0 - 95.0 | |
| #20 | 86.5 | | |
| #40 | 81.5 | 75.0 - 90.0 | |
| #60 | 77.4 | 60.0 - 75.0 | X |
| #100 | 73.0 | | |
| #200 | 53.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3287 $D_{85}$= 0.6934 $D_{60}$= 0.0910
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

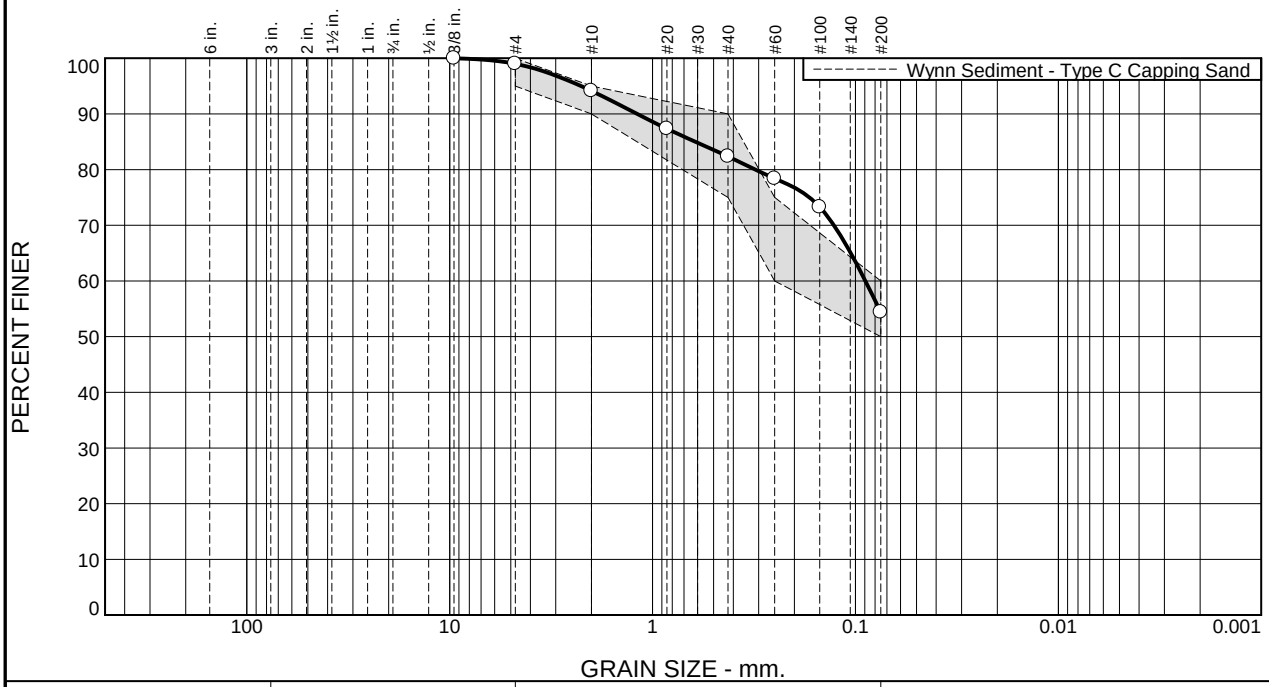
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 011

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 4.9 | 11.7 | 28.0 | 54.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.0 | 95.0 - 100.0 | |
| #10 | 94.1 | 90.0 - 95.0 | |
| #20 | 87.3 | | |
| #40 | 82.4 | 75.0 - 90.0 | |
| #60 | 78.4 | 60.0 - 75.0 | X |
| #100 | 73.3 | | |
| #200 | 54.4 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.1908 $D_{85}$= 0.6151 $D_{60}$= 0.0894
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

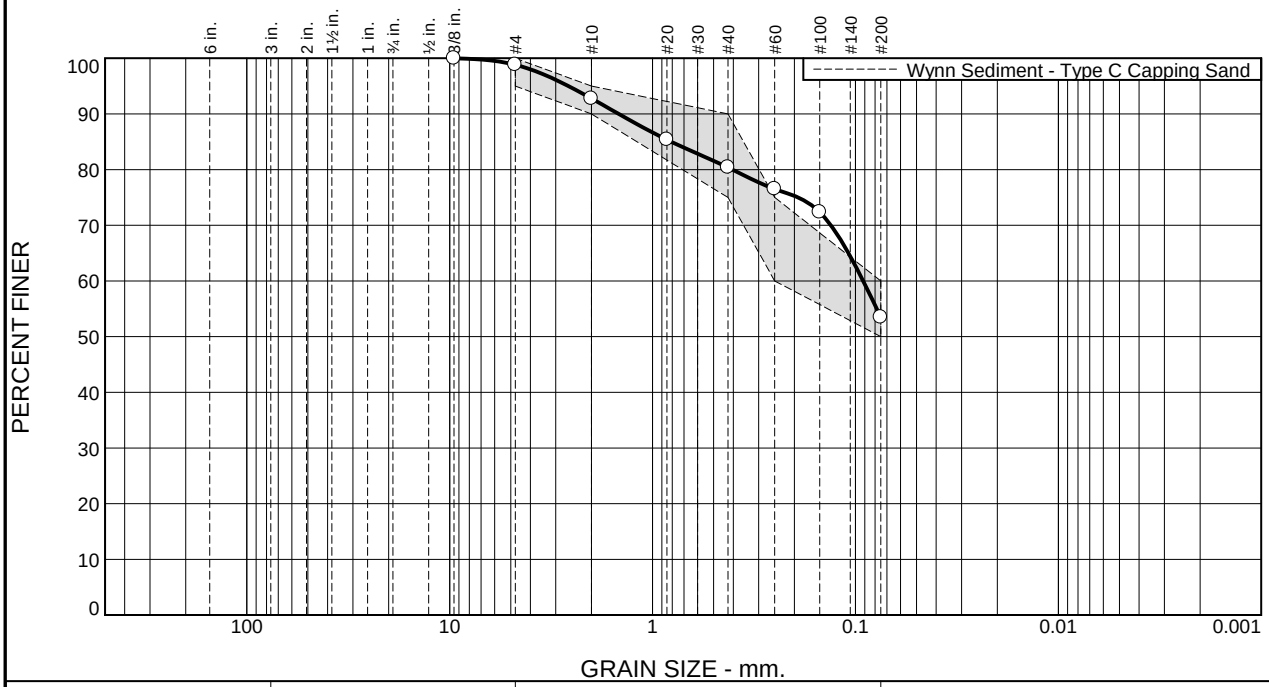
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 012

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.2 | 6.0 | 12.4 | 26.9 | 53.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.8 | 95.0 - 100.0 | |
| #10 | 92.8 | 90.0 - 95.0 | |
| #20 | 85.4 | | |
| #40 | 80.4 | 75.0 - 90.0 | |
| #60 | 76.5 | 60.0 - 75.0 | X |
| #100 | 72.4 | | |
| #200 | 53.5 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4687 $D_{85}$= 0.8101 $D_{60}$= 0.0917
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 013

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-10

# SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
**ESS Project No. 1712171**
Project Manager Marc Levesque
Date Received 12/7/2017 (by )

Client Company Charter
Client Email
Site Location
Date Assigned 12/7/2017

Collected By
Date Required 12/12/2017

| Sample Information | | | | Lab No. | Identification Tests | | | | | | | | Permeability | | Compaction | | | Soil Strength | | | Consol. | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring/ Test Pit No. | Sample or depth | Sample date | ESS Sample ID | | Water Cont. % | LL & PL % | Org. % | Bulk | Sieve -200 % | Hyd -2μ % | $G_s$ | Tube Den-sity | Sand | Clay | Mod. | Std. | CBR | Un-con-fined | UU | CIU | Stand ard | E.O.P. | |
| | | | | | D2216 | D4318 | D2974 | | D422 | | D854 | | D2434 | D5084 | D1557 | D698 | D1883 | D2166 | D2850 | D4767 | D2435 | D2435 | # |
| Type A - Capping Sand - 015 | | 12/7/17 | 1712171-01 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 016 | | 12/7/17 | 1712171-02 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 017 | | 12/7/17 | 1712171-03 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 018 | | 12/7/17 | 1712171-04 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 019 | | 12/7/17 | 1712171-05 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 009 | | 12/7/17 | 1712171-06 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 010 | | 12/7/17 | 1712171-07 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 011 | | 12/7/17 | 1712171-08 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 012 | | 12/7/17 | 1712171-09 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 013 | | 12/7/17 | 1712171-10 | | X | | | | X | | | | | | | | | | | | | | ** |

Notes: ** = D2487 Material Classification

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

## Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

# REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

**Report Prepared Date:**

December 21, 2017

## Report Information:

**Pace Project #: 10414063**
**Sample Receipt Date: 12/12/2017**
**Client Project #: 1712171**
**Client Sub PO #: B02407**
**State Cert #: N/A**

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Joanne Richardson

December 21, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

## Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## DISCUSSION

This report presents the results from the analyses performed on ten samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 35-87%. Except for eight low values, which were flagged "R" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batches using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 83-104% with relative percent differences of 0.6-13.3%. These results were within the target ranges for the method. Matrix spikes were prepared with the 12/13/2017 extraction batch using sample material from a separate project; results from these analyses will be provided upon request.



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Minnesota Laboratory Certifications

| Authority | Certificate # | Authority | Certificate # |
|---|---|---|---|
| A2LA | 2926.01 | Mississippi | MN00064 |
| Alabama | 40770 | Montana | CERT0092 |
| Alaska | MN00064 | Nebraska | NE-OS-18-06 |
| Alaska | UST-078 | Nevada | MN00064 |
| Arizona | AZ0014 | New Jersey (NE | MN002 |
| Arkansas | 88-0680 | New York (NEL | 11647 |
| CNMI Saipan | MP0003 | New hampshire | 2081 |
| California | MN00064 | North Carolina | 27700 |
| Colorado | MN00064 | North Carolina | 530 |
| Connecticut | PH-0256 | North Dakota | R-036 |
| EPA Region 8 | 8TMS-L | Ohio | 41244 |
| Florida (NELAP | E87605 | Ohio VAP | CL101 |
| Georgia (EDP) | 959 | Oklahoma | 9507 |
| Guam EPA | 959 | Oregon (ELAP) | MN200001 |
| Hawaii | MN00064 | Oregon (OREL | MN300001 |
| Idaho | MN00064 | Pennsylvania | 68-00563 |
| Illinois | 200011 | Puerto Rico | MN00064 |
| Indiana | C-MN-01 | South Carolina | 74003001 |
| Iowa | 368 | Tennessee | TN02818 |
| Kansas | E-10167 | Texas | T104704192 |
| Kentucky | 90062 | Utah (NELAP) | MN00064 |
| Louisiana | 03086 | Virginia | 460163 |
| Louisiana | MN00064 | Washington | C486 |
| Maine | MN00064 | West Virginia # | 9952C |
| Maryland | 322 | West Virginia D | 382 |
| Michigan | 9909 | Wisconsin | 999407970 |
| Minnesota | 027-053-137 | Wyoming | 8TMS-L |

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix A

Sample Management

10414063

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1712171

Turn Time ___ Standard Other **DUE 12/20/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1712171 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: ext 3083 | City , State: | Zip: | PO #: B02407 |
| Tel. | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12/7/17 | 1210 | G | S | 1712171-01 | 1 | 1 | AG | | X | | | | | | 001 | | |
| | 12/7/17 | 1213 | G | S | 1712171-02 | 1 | 1 | AG | | X | | | | | | 002 | | |
| | 12/7/17 | 1216 | G | S | 1712171-03 | 1 | 1 | AG | | X | | | | | | 003 | | |
| | 12/7/17 | 1219 | G | S | 1712171-04 | 1 | 1 | AG | | X | | | | | | 004 | | |
| | 12/7/17 | 1225 | G | S | 1712171-05 | 1 | 1 | AG | | X | | | | | | 005 | | |
| | 12/7/17 | 1228 | G | S | 1712171-06 | 1 | 1 | AG | | X | | | | | | 006 | | |
| | 12/7/17 | 1232 | G | S | 1712171-07 | 1 | 1 | AG | | X | | | | | | 007 | | |
| | 12/7/17 | 1236 | G | S | 1712171-08 | 1 | 1 | AG | | X | | | | | | 008 | | |
| | 12/7/17 | 1240 | G | S | 1712171-09 | 1 | 1 | AG | | X | | | | | | 009 | | |
| | 12/7/17 | 1244 | G | S | 1712171-10 | 1 | 1 | AG | | X | | | | | | 010 | | |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA: X

Cooler Temperature: 4.0

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| | | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) 12/12/17 800 T=4.0 | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 30Aug2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.21** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS Laboratory

**Project #:** WO#: 10414063

10414063

**Courier:** ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 1Z037 497 1545 4356 77

**Custody Seal on Cooler/Box Present?** ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☑ No

**Thermometer Used:** ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

**Cooler Temp Read (°C):** 3.9 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** ME 12/12/17

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | COMMENTS: |
|---|---|---|
| Chain of Custody Present? | ☑ Yes ☐ No | 1. |
| Chain of Custody Filled Out? | ☑ Yes ☐ No | 2. |
| Chain of Custody Relinquished? | ☐ Yes ☑ No | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes ☑ No ☐ N/A | 4. |
| Samples Arrived within Hold Time? | ☑ Yes ☐ No | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes ☑ No | 6. |
| **Rush Turn Around Time Requested?** | ☐ Yes ☑ No | 7. |
| Sufficient Volume? | ☑ Yes ☐ No | 8. |
| Correct Containers Used? | ☑ Yes ☐ No | 9. |
| -Pace Containers Used? | ☐ Yes ☑ No | |
| Containers Intact? | ☑ Yes ☐ No | 10. |
| Filtered Volume Received for Dissolved Tests? | ☐ Yes ☐ No ☑ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☑ Yes ☐ No | 12. |
| All containers needing acid/base preservation have been checked? | ☐ Yes ☐ No ☑ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N Sample # |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes ☐ No ☑ N/A | |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes ☐ No ☑ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes ☐ No ☑ N/A | 14. |
| Trip Blank Present? | ☐ Yes ☐ No ☑ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes ☐ No ☑ N/A | |
| Pace Trip Blank Lot # (if purchased): | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

**Project Manager Review:** Joanne Richardson **Date:** 12-12-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix B

Sample Analysis  Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-01 | | | |
| Lab Sample ID | 10414063001 | | | |
| Filename | U171216B_10 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.6 g | Matrix | Solid | |
| % Moisture | 4.2 | Dilution | NA | |
| Dry Weight Extracted | 11.1 g | Collected | 12/07/2017 | 12:10 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/16/2017 | 20:44 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 52 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 53 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 69 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 60 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 65 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 56 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 38 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 62 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-02 | | | |
| Lab Sample ID | 10414063002 | | | |
| Filename | U171216B_11 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.1 g | Matrix | Solid | |
| % Moisture | 3.7 | Dilution | NA | |
| Dry Weight Extracted | 10.7 g | Collected | 12/07/2017 | 12:13 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/16/2017 | 21:28 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 55 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 57 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 70 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 79 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 75 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 66 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 72 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 60 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 38 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712171-03 | | |
| Lab Sample ID | 10414063003 | | |
| Filename | U171216B_12 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 11.3 g | Matrix | Solid |
| % Moisture | 3.4 | Dilution | NA |
| Dry Weight Extracted | 10.9 g | Collected | 12/07/2017 12:16 |
| ICAL ID | U171107 | Received | 12/12/2017 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/16/2017 22:12 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 64 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 64 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 61 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 63 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 75 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 75 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 68 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 56 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 66 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 47 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 69 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712171-04 | | |
| Lab Sample ID | 10414063004 | | |
| Filename | U171216B_13 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 11.3 g | Matrix | Solid |
| % Moisture | 3.7 | Dilution | NA |
| Dry Weight Extracted | 10.9 g | Collected | 12/07/2017 12:19 |
| ICAL ID | U171107 | Received | 12/12/2017 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/16/2017 22:56 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 52 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 51 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 65 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 73 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 58 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 69 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 49 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 37 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-05 | | | |
| Lab Sample ID | 10414063005 | | | |
| Filename | U171216B_14 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.3 g | Matrix | Solid | |
| % Moisture | 3.3 | Dilution | NA | |
| Dry Weight Extracted | 10.9 g | Collected | 12/07/2017 | 12:25 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/16/2017 | 23:40 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 49 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 51 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 47 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 47 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 49 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 73 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 67 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 49 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 60 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 63 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 44 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 54 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 35 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 55 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-06 | | | |
| Lab Sample ID | 10414063006 | | | |
| Filename | U171216B_15 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.2 g | Matrix | Solid | |
| % Moisture | 8.6 | Dilution | NA | |
| Dry Weight Extracted | 11.2 g | Collected | 12/07/2017 | 12:28 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 00:23 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 49 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 50 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 51 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 66 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 67 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 56 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 63 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 56 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 37 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 55 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-07 | | | |
| Lab Sample ID | 10414063007 | | | |
| Filename | U171216B_16 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.3 g | Matrix | Solid | |
| % Moisture | 10.7 | Dilution | NA | |
| Dry Weight Extracted | 11.0 g | Collected | 12/07/2017 | 12:32 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 01:07 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 52 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 48 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 51 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 51 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 61 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 64 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 68 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 50 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 56 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 63 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 46 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 53 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 36 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 51 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-08 | | | |
| Lab Sample ID | 10414063008 | | | |
| Filename | U171216B_17 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.1 g | Matrix | Solid | |
| % Moisture | 9.8 | Dilution | NA | |
| Dry Weight Extracted | 10.9 g | Collected | 12/07/2017 | 12:36 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 01:50 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 51 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 51 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 51 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 73 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 84 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 81 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 73 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 66 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 50 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 38 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 53 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-09 | | | |
| Lab Sample ID | 10414063009 | | | |
| Filename | U171216B_18 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.4 g | Matrix | Solid | |
| % Moisture | 11.3 | Dilution | NA | |
| Dry Weight Extracted | 11.0 g | Collected | 12/07/2017 | 12:40 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 02:34 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 53 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 52 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 70 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 69 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 51 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 59 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 69 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 49 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 35 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 55 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712171-10 | | | |
| Lab Sample ID | 10414063010 | | | |
| Filename | F171220A_08 | | | |
| Injected By | SMT | | | |
| Total Amount Extracted | 12.4 g | Matrix | Solid | |
| % Moisture | 17.3 | Dilution | NA | |
| Dry Weight Extracted | 10.3 g | Collected | 12/07/2017 | 12:44 |
| ICAL ID | F171219 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | F171220A_01 & F171220B_01 | Extracted | 12/14/2017 | 14:55 |
| Method Blank ID | BLANK-59190 | Analyzed | 12/20/2017 | 15:58 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 71 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 69 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 78 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 80 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 87 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 72 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 65 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 65 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 66 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 60 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 67 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 52 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 72 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-59101 | Matrix | Solid |
| Filename | U171216B_07 | Dilution | NA |
| Total Amount Extracted | 10.0 g | Extracted | 12/13/2017 14:50 |
| ICAL ID | U171107 | Analyzed | 12/16/2017 18:33 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Injected By | BAL |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 53 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 54 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 72 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 41 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-59190 | Matrix | Solid |
| Filename | F171220B_04 | Dilution | NA |
| Total Amount Extracted | 20.5 g | Extracted | 12/14/2017 14:55 |
| ICAL ID | F171219 | Analyzed | 12/21/2017 01:18 |
| CCal Filename(s) | F171220B_01 & F171220B_15 | Injected By | SMT |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 79 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 72 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 108 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 108 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 105 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 77 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 74 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 71 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 58 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 44 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 77 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-59102 | | |
| Filename | U171216B_06 | Matrix | Solid |
| Total Amount Extracted | 10.6 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/13/2017 14:50 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Analyzed | 12/16/2017 17:49 |
| Method Blank ID | BLANK-59101 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. |
|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 91 |
| Total TCDF | | | |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 93 |
| Total TCDD | | | |
| 1,2,3,7,8-PeCDF | 1.0 | 0.95 | 95 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.86 | 86 |
| Total PeCDF | | | |
| 1,2,3,7,8-PeCDD | 1.0 | 0.87 | 87 |
| Total PeCDD | | | |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.94 | 94 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.88 | 88 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.84 | 84 |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.85 | 85 |
| Total HxCDF | | | |
| 1,2,3,4,7,8-HxCDD | 1.0 | 1.0 | 100 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.98 | 98 |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.95 | 95 |
| Total HxCDD | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.94 | 94 |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.93 | 93 |
| Total HpCDF | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.85 | 85 |
| Total HpCDD | | | |
| OCDF | 2.0 | 2.0 | 100 |
| OCDD | 2.0 | 1.9 | 94 |

| Internal Standards | ng's Added | Percent Recovery |
|---|---|---|
| 2,3,7,8-TCDF-13C | 2.0 | 59 |
| 2,3,7,8-TCDD-13C | 2.0 | 57 |
| 1,2,3,7,8-PeCDF-13C | 2.0 | 56 |
| 2,3,4,7,8-PeCDF-13C | 2.0 | 57 |
| 1,2,3,7,8-PeCDD-13C | 2.0 | 60 |
| 1,2,3,4,7,8-HxCDF-13C | 2.0 | 70 |
| 1,2,3,6,7,8-HxCDF-13C | 2.0 | 79 |
| 2,3,4,6,7,8-HxCDF-13C | 2.0 | 81 |
| 1,2,3,7,8,9-HxCDF-13C | 2.0 | 64 |
| 1,2,3,4,7,8-HxCDD-13C | 2.0 | 68 |
| 1,2,3,6,7,8-HxCDD-13C | 2.0 | 73 |
| 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 66 |
| 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 54 |
| 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 64 |
| OCDD-13C | 4.0 | 44 |
| 1,2,3,4-TCDD-13C | 2.0 | NA |
| 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-59191 | | |
| Filename | F171220B_02 | Matrix | Solid |
| Total Amount Extracted | 20.2 g | Dilution | NA |
| ICAL ID | F171219 | Extracted | 12/14/2017 14:55 |
| CCal Filename(s) | F171220B_01 & F171220B_15 | Analyzed | 12/20/2017 23:52 |
| Method Blank ID | BLANK-59190 | Injected By | SMT |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. |
|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 89 |
| Total TCDF | | | |
| 2,3,7,8-TCDD | 0.20 | 0.18 | 92 |
| Total TCDD | | | |
| 1,2,3,7,8-PeCDF | 1.0 | 0.94 | 94 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.86 | 86 |
| Total PeCDF | | | |
| 1,2,3,7,8-PeCDD | 1.0 | 0.90 | 90 |
| Total PeCDD | | | |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.93 | 93 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.88 | 88 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.83 | 83 |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.89 | 89 |
| Total HxCDF | | | |
| 1,2,3,4,7,8-HxCDD | 1.0 | 0.90 | 90 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.97 | 97 |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.93 | 93 |
| Total HxCDD | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.88 | 88 |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.87 | 87 |
| Total HpCDF | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.84 | 84 |
| Total HpCDD | | | |
| OCDF | 2.0 | 1.8 | 90 |
| OCDD | 2.0 | 1.8 | 90 |

| Internal Standards | ng's Added | Percent Recovery |
|---|---|---|
| 2,3,7,8-TCDF-13C | 2.0 | 77 |
| 2,3,7,8-TCDD-13C | 2.0 | 73 |
| 1,2,3,7,8-PeCDF-13C | 2.0 | 88 |
| 2,3,4,7,8-PeCDF-13C | 2.0 | 84 |
| 1,2,3,7,8-PeCDD-13C | 2.0 | 90 |
| 1,2,3,4,7,8-HxCDF-13C | 2.0 | 76 |
| 1,2,3,6,7,8-HxCDF-13C | 2.0 | 77 |
| 2,3,4,6,7,8-HxCDF-13C | 2.0 | 79 |
| 1,2,3,7,8,9-HxCDF-13C | 2.0 | 72 |
| 1,2,3,4,7,8-HxCDD-13C | 2.0 | 77 |
| 1,2,3,6,7,8-HxCDD-13C | 2.0 | 69 |
| 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 73 |
| 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 66 |
| 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 74 |
| OCDD-13C | 4.0 | 53 |
| 1,2,3,4-TCDD-13C | 2.0 | NA |
| 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 2,3,7,8-TCDD-37Cl4 | 0.20 | 76 |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712171-10-MS | | |
| Lab Sample ID | 10414063010-MS | | |
| Filename | F171220A_12 | Matrix | Solid |
| Total Amount Extracted | 12.4 g | Dilution | NA |
| ICAL ID | F171219 | Extracted | 12/14/2017 14:55 |
| CCal Filename(s) | F171220A_01 & F171220B_01 | Analyzed | 12/20/2017 18:50 |
| Method Blank ID | BLANK-59190 | Injected By | SMT |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 92 | 2,3,7,8-TCDF-13C | 2.00 | 78 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 75 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 95 |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 97 | 2,3,4,7,8-PeCDF-13C | 2.00 | 93 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 99 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 71 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.01 | 101 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 71 |
| 2,3,4,7,8-PeCDF | 1.00 | 0.91 | 91 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 72 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 67 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 72 |
| 1,2,3,7,8-PeCDD | 1.00 | 0.93 | 93 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 67 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 68 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 63 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 0.98 | 98 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 69 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.93 | 93 | OCDD-13C | 4.00 | 56 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.88 | 88 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.96 | 96 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 0.97 | 97 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 79 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.98 | 98 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 1.01 | 101 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 0.94 | 94 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 0.92 | 92 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 0.92 | 92 | | | |
| OCDF | 2.00 | 1.80 | 90 | | | |
| OCDD | 2.00 | 1.96 | 98 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712171-10-MSD | | |
| Lab Sample ID | 10414063010-MSD | | |
| Filename | F171220A_13 | Matrix | Solid |
| Total Amount Extracted | 12.4 g | Dilution | NA |
| ICAL ID | F171219 | Extracted | 12/14/2017 14:55 |
| CCal Filename(s) | F171220A_01 & F171220B_01 | Analyzed | 12/20/2017 19:33 |
| Method Blank ID | BLANK-59190 | Injected By | SMT |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.19 | 96 | 2,3,7,8-TCDF-13C | 2.00 | 68 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 60 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 76 |
| 2,3,7,8-TCDD | 0.20 | 0.20 | 100 | 2,3,4,7,8-PeCDF-13C | 2.00 | 77 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 78 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 84 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.04 | 104 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 82 |
| 2,3,4,7,8-PeCDF | 1.00 | 0.94 | 94 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 81 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 81 |
| 1,2,3,7,8-PeCDD | 1.00 | 0.97 | 97 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 76 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 76 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 63 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 1.02 | 102 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 73 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.97 | 97 | OCDD-13C | 4.00 | 63 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.90 | 90 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.97 | 97 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 1.04 | 104 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 62 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 1.01 | 101 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.88 | 88 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 0.97 | 97 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 0.95 | 95 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 0.95 | 95 | | | |
| OCDF | 2.00 | 1.94 | 97 | | | |
| OCDD | 2.00 | 2.06 | 103 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spike Sample Results

Client - ESS Laboratory

| | | | | | |
|---|---|---|---|---|---|
| Client Sample ID | 1712171-10 | | | Dry Weights | |
| Lab Sample ID | 10414063010 | Sample Filename | F171220A_08 | Sample Amount | 10.3 g |
| MS ID | 10414063010-MS | MS Filename | F171220A_12 | MS Amount | 10.3 g |
| MSD ID | 10414063010-MSD | MSD Filename | F171220A_13 | MSD Amount | 10.3 g |

| Analyte | Sample Conc. ng/Kg | MS/MSD Qs (ng) | MS Qm (ng) | MSD Qm (ng) | RPD | Background Subtracted MS % Rec. | MSD % Rec. | RPD |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.000 | 0.20 | 0.18 | 0.19 | 4.3 | 92 | 96 | 4.3 |
| 2,3,7,8-TCDD | 0.000 | 0.20 | 0.19 | 0.20 | 2.9 | 97 | 100 | 2.9 |
| 1,2,3,7,8-PeCDF | 0.000 | 1.00 | 1.01 | 1.04 | 3.5 | 101 | 104 | 3.5 |
| 2,3,4,7,8-PeCDF | 0.000 | 1.00 | 0.91 | 0.94 | 3.2 | 91 | 94 | 3.2 |
| 1,2,3,7,8-PeCDD | 0.000 | 1.00 | 0.93 | 0.97 | 4.0 | 93 | 97 | 4.0 |
| 1,2,3,4,7,8-HxCDF | 0.000 | 1.00 | 0.98 | 1.02 | 3.9 | 98 | 102 | 3.9 |
| 1,2,3,6,7,8-HxCDF | 0.000 | 1.00 | 0.93 | 0.97 | 4.5 | 93 | 97 | 4.5 |
| 2,3,4,6,7,8-HxCDF | 0.000 | 1.00 | 0.88 | 0.90 | 1.7 | 88 | 90 | 1.7 |
| 1,2,3,7,8,9-HxCDF | 0.000 | 1.00 | 0.96 | 0.97 | 0.6 | 96 | 97 | 0.6 |
| 1,2,3,4,7,8-HxCDD | 0.000 | 1.00 | 0.97 | 1.04 | 7.2 | 97 | 104 | 7.2 |
| 1,2,3,6,7,8-HxCDD | 0.000 | 1.00 | 0.98 | 1.01 | 2.6 | 98 | 101 | 2.6 |
| 1,2,3,7,8,9-HxCDD | 0.000 | 1.00 | 1.01 | 0.88 | 13.3 | 101 | 88 | 13.3 |
| 1,2,3,4,6,7,8-HpCDF | 0.000 | 1.00 | 0.94 | 0.97 | 2.5 | 94 | 97 | 2.5 |
| 1,2,3,4,7,8,9-HpCDF | 0.000 | 1.00 | 0.92 | 0.95 | 2.9 | 92 | 95 | 2.9 |
| 1,2,3,4,6,7,8-HpCDD | 0.000 | 1.00 | 0.92 | 0.95 | 3.5 | 92 | 95 | 3.5 |
| OCDF | 0.000 | 2.00 | 1.80 | 1.94 | 7.2 | 90 | 97 | 7.2 |
| OCDD | 0.000 | 2.00 | 1.96 | 2.06 | 5.3 | 97 | 102 | 5.4 |

**Definitions**

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712171
Date Received: 12/7/2017
Project Due Date: 12/12/2017
Days for Project: 3 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 2.1 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 01-10
    Analysis: Grain Size
    TAT: 30 Day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 12/7/17 Time: 1508 By: 4

Sample Receiving Notes:
Grain Size for Analysis - Post on Hold W 12/7/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? ____ Date: ____ Time: ____ By: ____

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 188757 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 188758 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 188768 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 01 | 188778 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 01 | 188788 | Yes | NA | Yes | Plastic Baggie | NP | |
| 01 | 188798 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 188817 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 188818 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 188755 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 188756 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 188767 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 188777 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 02 | 188787 | Yes | NA | Yes | Plastic Baggie | NP | |
| 02 | 188797 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 188815 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 188816 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 188753 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 188754 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 188766 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 188776 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP | |
| 03 | 188786 | Yes | NA | Yes | Plastic Baggie | NP | |
| 03 | 188796 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 188813 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 188814 | Yes | NA | Yes | VOA Vial - Other | Other | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712171

Date Received: 12/7/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 188751 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 188752 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 188765 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 04 | 188775 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 04 | 188785 | Yes | NA | Yes | Plastic Baggie | NP |
| 04 | 188795 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 04 | 188811 | Yes | NA | Yes | VOA Vial - Other | Other |
| 04 | 188812 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 188749 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 188750 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 188764 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 188774 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 05 | 188784 | Yes | NA | Yes | Plastic Baggie | NP |
| 05 | 188794 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 188809 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 188810 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 188747 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 188748 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 188763 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 188773 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 06 | 188783 | Yes | NA | Yes | Plastic Baggie | NP |
| 06 | 188793 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 188807 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 188808 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 188745 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 188746 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 188762 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 188772 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 07 | 188782 | Yes | NA | Yes | Plastic Baggie | NP |
| 07 | 188792 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 188805 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 188806 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 188743 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 188744 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 188761 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 188771 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 08 | 188781 | Yes | NA | Yes | Plastic Baggie | NP |
| 08 | 188791 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 188803 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 188804 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 188741 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 188742 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 188760 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 188770 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 09 | 188780 | Yes | NA | Yes | Plastic Baggie | NP |
| 09 | 188790 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 188801 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 188802 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 188739 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 188740 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 188759 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 188769 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 10 | 188779 | Yes | NA | Yes | Plastic Baggie | NP |
| 10 | 188789 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 188799 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 188800 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 188819 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 188820 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/7/17 1455

Reviewed By: _____ Date & Time: 12/7/17 1508

Delivered By: _____ 12/7/17 1508

Changes made 12/11/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

| | |
|---|---|
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Is this project for any of the following? | ○CT RCP ◉MA MCP ○RGP |
| ESS Lab # | 1712171 |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/30/17 | 12:10 | Grab | Soil | Type A - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 11/30/17 | 12:13 | Grab | Soil | Type A - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 11/30/17 | 12:16 | Grab | Soil | Type A - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 11/30/17 | 12:19 | Grab | Soil | Type A - Capping Sand - 018 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 11/30/17 | 12:25 | Grab | Soil | Type A - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 11/30/17 | 12:28 | Grab | Soil | Type C - Capping Sand - 009 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 11/30/17 | 12:32 | Grab | Soil | Type C - Capping Sand - 010 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 11/30/17 | 12:36 | Grab | Soil | Type C - Capping Sand - 011 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 11/30/17 | 12:40 | Grab | Soil | Type C - Capping Sand - 012 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 11/30/17 | 12:44 | Grab | Soil | Type C - Capping Sand - 013 | X | X | X | X | X | X | X | X | X | X | X |

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 12/17 Temp blank (TB) vials

Number of Containers per Sample:

**Laboratory Use Only**

Cooler Present: ✓

Seals Intact: –

Cooler Temperature: Ice/emf 2.1 °C

Sampled by: Aggregate Industries QC

Comments: Please specify "Other" preservative and containers types in this space

~~Hold on Analytical Testing until discussion with Katherine Mason, dependent on gradation results~~ 12/11/17 ML ~~12/7/17~~

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] | [signature] 12-7-17 | [signature] 12-7-17 | [signature] 12/7/17 1417 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Gavin Wilton SPS | | | |

13:45

CHANGES MADE 12/8/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1712171

Turn Time ~~5 Day~~ Rush due 12/11/17

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/30/17 | 12:10 | Grab | Soil | Type A - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 11/30/17 | 12:13 | Grab | Soil | Type A - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 11/30/17 | 12:16 | Grab | Soil | Type A - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 11/30/17 | 12:19 | Grab | Soil | Type A - Capping Sand - 018 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 11/30/17 | 12:25 | Grab | Soil | Type A - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 11/30/17 | 12:28 | Grab | Soil | Type C - Capping Sand - 009 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 11/30/17 | 12:32 | Grab | Soil | Type C - Capping Sand - 010 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 11/30/17 | 12:36 | Grab | Soil | Type C - Capping Sand - 011 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 11/30/17 | 12:40 | Grab | Soil | Type C - Capping Sand - 012 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 11/30/17 | 12:44 | Grab | Soil | Type C - Capping Sand - 013 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 12/17 Temp blanks (TB) VIVIS

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: ✓

Seals Intact: –

Cooler Temperature: Iceless 2.1 °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on Analytical Testing until discussion with Katherine Mason, dependent on gradation results

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] | [signature] 12-7-17 11:46 | [signature] 12-7-17 11:12 | [signature] 12/7/17 1417 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS 12:45 | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712171 |
| Turn Time | 5-Day Rush |
| Reporting Limits | S-1 |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 11/30/17 | 12:10 | Grab | Soil | Type A - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 02 | 11/30/17 | 12:13 | Grab | Soil | Type A - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 03 | 11/30/17 | 12:16 | Grab | Soil | Type A - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 04 | 11/30/17 | 12:19 | Grab | Soil | Type A - Capping Sand - 018 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 05 | 11/30/17 | 12:25 | Grab | Soil | Type A - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 06 | 11/30/17 | 12:28 | Grab | Soil | Type C - Capping Sand - 009 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 07 | 11/30/17 | 12:32 | Grab | Soil | Type C - Capping Sand - 010 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 08 | 11/30/17 | 12:36 | Grab | Soil | Type C - Capping Sand - 011 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 09 | 11/30/17 | 12:40 | Grab | Soil | Type C - Capping Sand - 012 | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| 10 | 11/30/17 | 12:44 | Grab | Soil | Type C - Capping Sand - 013 | X | X | X | X | X | X | X | X | X | X | X | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 12/17 Temp blanks (TB) VOCs

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: ✓

Seals Intact: –

Cooler Temperature: Iceless 2.1 °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on Analytical Testing until discussion with Katherine Mason, dependent on gradation results

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] | [signature] 12-7-17 11:46 | [signature] 12-7-17 11:12 | [signature] 12/7/17 1417 |
| **Relinquished by: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** | **Relinquished By: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** |
| Devon Wilton SPS 12:45 | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1712199**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 4:57 pm, Dec 21, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**

| | |
|---|---|
| CTS - Cranston, RI | Grain Size Analysis, Soil Classification, Water Content |
| Pace Analytical - Minneapolis, MN | Dioxin |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

## SAMPLE RECEIPT

The following samples were received on December 11, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on December 8, 2017 at 10:02.**

**These samples were originally received on December 8, 2017.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712199-01 | Type A - Capping Sand - 020 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-02 | Type A - Capping Sand - 021 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-03 | Type A - Capping Sand - 022 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-04 | Type A - Capping Sand - 023 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-05 | Type A - Capping Sand - 024 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-06 | Type C - Capping Sand - 014 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-07 | Type C - Capping Sand - 015 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-08 | Type C - Capping Sand - 016 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-09 | Type C - Capping Sand - 017 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-10 | Type C - Capping Sand - 018 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712199-11 | Trip Blank | Solid | 8260B Low |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

C7L0188-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
1,4-Dioxane (23% @ 20%), 2-Hexanone (26% @ 20%), 4-Methyl-2-Pentanone (24% @ 20%), Dichlorodifluoromethane (25% @ 20%), Naphthalene (28% @ 20%), sec-Butylbenzene (28% @ 20%), Tetrahydrofuran (33% @ 20%)

**8151A Chlorinated Herbicides**

1712199-09 **Modified result**
MCPA [2C] , MCPP [2C]

1712199-09 **Peaks found in the retention time window for MCPA, MCPP did not confirm by GC/MS.**

**8270D Semi-Volatile Organic Compounds**

C7L0183-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (97% @ 80-120%), 2,6-Dinitrotoluene (97% @ 80-120%)

C7L0183-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (86% @ 80-120%), Pentachlorophenol (87% @ 80-120%)

C7L0183-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (30% @ 20%), Pyridine (22% @ 20%)

C7L0200-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (101% @ 80-120%)

C7L0200-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (93% @ 80-120%), Pentachlorophenol (98% @ 80-120%)

C7L0200-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (21% @ 20%), N-Nitrosodimethylamine (22% @ 20%), Pyridine (23% @ 20%)

C7L0208-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (69% @ 80-120%), Pentachlorophenol (69% @ 80-120%)

C7L0208-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4-Dinitrophenol (31% @ 20%), N-Nitrosodimethylamine (50% @ 20%), Pentachlorophenol (31% @ 20%)

C7L0225-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (90% @ 80-120%), 2,6-Dinitrotoluene (93% @ 80-120%)

C7L0225-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (100% @ 80-120%)

C7L0225-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
4-Nitrophenol (22% @ 20%), N-Nitrosodimethylamine (31% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712199

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

## CURRENT SW-846 METHODOLOGY VERSIONS

### Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

### Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712199-01 through 1712199-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (X) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | (X) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | ( ) MassDEP EPH CAM IV B | (X) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes (X) No ( )* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard

Date: December 21, 2017

Printed Name: Laurel Stoddard

Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 12/13/17 17:42 | 2.27 | 100 | CL71223 |
| Arsenic | ND (2.28) | | 6010C | | 1 | KJK | 12/16/17 3:09 | 2.27 | 100 | CL71223 |
| Barium | ND (2.28) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| **Beryllium** | **0.38** (0.10) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| Chromium | ND (0.91) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| Lead | ND (4.55) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| Mercury | ND (0.022) | | 7471B | | 1 | MJV | 12/13/17 13:13 | 0.91 | 40 | CL71224 |
| Nickel | ND (2.28) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 12/13/17 17:42 | 2.27 | 100 | CL71223 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 12/13/17 17:42 | 2.27 | 100 | CL71223 |
| Vanadium | ND (0.91) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |
| **Zinc** | **6.60** (2.28) | | 6010C | | 1 | KJK | 12/15/17 2:36 | 2.27 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 4.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Acetone | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Benzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 4.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Bromoform | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Chloroform | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0024) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Styrene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Toluene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 4.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Xylene O | ND (0.0060) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0120) | | 8260B Low | | 1 | 12/13/17 21:48 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *126 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *117 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *99 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0213) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 2:02 | C7L0182 | CL71208 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *105 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *117 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *90 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:21 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *97 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *92 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| MCPA | ND (2.38) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/21/17 3:33 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *69 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.73) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.689) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.689) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.689) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.73) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Acetophenone | ND (0.689) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Aniline | ND (1.73) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Anthracene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Azobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.173) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Chrysene | ND (0.173) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.173) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Fluorene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Isophorone | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Naphthalene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.73) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Phenol | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |
| Pyrene | ND (0.344) | | 8270D | | 1 | 12/15/17 2:50 | C7L0225 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *80 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *89 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *81 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *93 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *72 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *86 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *74 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *112 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 020
Date Sampled: 12/07/17 07:15

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (111) | | 9060 | | 1 | DEL | 12/17/17 15:44 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.41) | | 6020A | | 20 | NAR | 12/13/17 18:23 | 2.52 | 100 | CL71223 |
| Arsenic | ND (2.05) | | 6010C | | 1 | KJK | 12/16/17 3:42 | 2.52 | 100 | CL71223 |
| **Barium** | **2.50** (2.05) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| **Beryllium** | **0.44** (0.09) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| Cadmium | ND (0.41) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| Chromium | ND (0.82) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| **Lead** | **6.04** (4.10) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| Mercury | ND (0.020) | | 7471B | | 1 | MJV | 12/13/17 13:27 | 1.01 | 40 | CL71224 |
| Nickel | ND (2.05) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| Selenium | ND (0.41) | | 6020A | | 20 | NAR | 12/13/17 18:23 | 2.52 | 100 | CL71223 |
| Silver | ND (0.41) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| Thallium | ND (0.41) | | 6020A | | 20 | NAR | 12/13/17 18:23 | 2.52 | 100 | CL71223 |
| Vanadium | ND (0.82) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |
| **Zinc** | **7.91** (2.05) | | 6010C | | 1 | KJK | 12/15/17 2:56 | 2.52 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0834) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Acetone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 6.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 22:13 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *126 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *118 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 19.8
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0209) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/15/17 2:32 | C7L0182 | CL71208 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *112 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *123 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:40 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *90 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| MCPA | ND (2.38) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/21/17 4:05 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *66 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *73 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.77) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.709) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.709) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.709) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.77) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Acetophenone | ND (0.709) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Aniline | ND (1.77) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Anthracene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Azobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.177) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Chrysene | ND (0.177) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.177) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Fluorene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Isophorone | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Naphthalene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.77) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Phenol | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |
| Pyrene | ND (0.354) | | 8270D | | 1 | 12/15/17 3:24 | C7L0225 | CL71211 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *79 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *87 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *80 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *70 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *82 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *75 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *104 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 021
Date Sampled: 12/07/17 07:19

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (91.1) | | 9060 | | 1 | DEL | 12/17/17 16:39 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.31) | | 6020A | | 20 | NAR | 12/13/17 18:28 | 3.35 | 100 | CL71223 |
| Arsenic | ND (3.09) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Barium | ND (3.09) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| **Beryllium** | **0.41** (0.14) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Cadmium | ND (0.62) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Chromium | ND (1.24) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Lead | ND (6.18) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Mercury | ND (0.024) | | 7471B | | 1 | MJV | 12/13/17 13:29 | 0.84 | 40 | CL71224 |
| Nickel | ND (3.09) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Selenium | ND (0.31) | | 6020A | | 20 | NAR | 12/13/17 18:28 | 3.35 | 100 | CL71223 |
| Silver | ND (0.62) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| Thallium | ND (0.31) | | 6020A | | 20 | NAR | 12/13/17 18:28 | 3.35 | 100 | CL71223 |
| Vanadium | ND (1.24) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |
| **Zinc** | **6.36** (3.09) | | 6010C | | 2 | KJK | 12/16/17 3:46 | 3.35 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0848) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Acetone | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0085) | | 8260B Low | | 1 | 12/13/17 22:38 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Aldrin | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0204) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Endrin | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:01 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *109 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *119 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *85 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *95 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 16:58 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *93 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| MCPA | ND (2.38) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/21/17 4:37 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *69 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.83) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.729) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.729) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.729) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.83) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Acetophenone | ND (0.729) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Aniline | ND (1.83) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Anthracene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Azobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.183) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Chrysene | ND (0.183) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.183) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Fluorene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Isophorone | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Naphthalene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.83) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Phenol | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |
| Pyrene | ND (0.364) | | 8270D | | 1 | 12/15/17 3:58 | C7L0225 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *79 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *88 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *76 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *69 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *84 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *70 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *104 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 022
Date Sampled: 12/07/17 07:23

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (82.9) | | 9060 | | 1 | DEL | 12/17/17 16:57 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.40) | | 6020A | | 20 | NAR | 12/13/17 18:34 | 2.62 | 100 | CL71223 |
| Arsenic | ND (1.98) | | 6010C | | 1 | KJK | 12/16/17 3:50 | 2.62 | 100 | CL71223 |
| **Barium** | **2.23** (1.98) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| **Beryllium** | **0.39** (0.09) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| Cadmium | ND (0.40) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| Chromium | ND (0.79) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| **Lead** | **4.66** (3.95) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| Mercury | ND (0.027) | | 7471B | | 1 | MJV | 12/13/17 13:31 | 0.75 | 40 | CL71224 |
| Nickel | ND (1.98) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| Selenium | ND (0.40) | | 6020A | | 20 | NAR | 12/13/17 18:34 | 2.62 | 100 | CL71223 |
| Silver | ND (0.40) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| Thallium | ND (0.40) | | 6020A | | 20 | NAR | 12/13/17 18:34 | 2.62 | 100 | CL71223 |
| Vanadium | ND (0.79) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |
| **Zinc** | **6.44** (1.98) | | 6010C | | 1 | KJK | 12/15/17 3:05 | 2.62 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0893) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Acetone | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Benzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Bromoform | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Chloroform | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Styrene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Toluene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 5.8
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Xylene O | ND (0.0045) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0089) | | 8260B Low | | 1 | 12/13/17 23:04 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *125 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *118 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *99 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 20.9
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Aldrin | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0198) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Endrin | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0025) | | 8081B | | 1 | 12/15/17 3:31 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *85 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *96 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *62 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *71 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 17:17 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *101 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *81 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *92 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| MCPA | ND (2.38) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/21/17 5:09 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *65 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *70 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.75) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.700) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.700) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.700) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.75) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Acetophenone | ND (0.700) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Aniline | ND (1.75) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Anthracene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Azobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.175) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Chrysene | ND (0.175) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.175) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Fluorene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Isophorone | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Naphthalene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.75) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Phenol | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |
| Pyrene | ND (0.350) | | 8270D | | 1 | 12/15/17 4:32 | C7L0225 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *78 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *87 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *80 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27
Percent Solids: 97
Initial Volume: 14.8
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *81 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *76 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *105 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 023
Date Sampled: 12/07/17 07:27

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (96.2) | | 9060 | | 1 | DEL | 12/17/17 17:47 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.49) | | 6020A | | 20 | NAR | 12/13/17 18:40 | 2.13 | 100 | CL71223 |
| Arsenic | ND (2.43) | | 6010C | | 1 | KJK | 12/16/17 3:54 | 2.13 | 100 | CL71223 |
| Barium | ND (2.43) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| **Beryllium** | **0.47** (0.11) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| Cadmium | ND (0.49) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| Chromium | ND (0.97) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| **Lead** | **4.91** (4.87) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| Mercury | ND (0.015) | | 7471B | | 1 | MJV | 12/13/17 13:33 | 1.33 | 40 | CL71224 |
| Nickel | ND (2.43) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| Selenium | ND (0.49) | | 6020A | | 20 | NAR | 12/13/17 18:40 | 2.13 | 100 | CL71223 |
| Silver | ND (0.49) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| Thallium | ND (0.49) | | 6020A | | 20 | NAR | 12/13/17 18:40 | 2.13 | 100 | CL71223 |
| Vanadium | ND (0.97) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |
| **Zinc** | **5.23** (2.43) | | 6010C | | 1 | KJK | 12/15/17 3:21 | 2.13 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0879) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Acetone | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Benzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Bromoform | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Chloroform | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Styrene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Toluene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 5.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Xylene O | ND (0.0044) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0088) | | 8260B Low | | 1 | 12/13/17 23:29 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *129 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *120 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *99 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0212) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/15/17 4:00 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *98 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *108 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *71 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 19:28 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *101 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *108 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *94 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| MCPA | ND (2.39) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |
| MCPP | ND (2.41) | | 8151A | | 1 | 12/21/17 5:41 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *67 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *74 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,4-Dichlorophenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,4-Dimethylphenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,4-Dinitrophenol | ND (1.82) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2-Chloronaphthalene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2-Chlorophenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2-Methylnaphthalene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2-Methylphenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 2-Nitrophenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.726) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 3+4-Methylphenol | ND (0.726) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 4-Chloroaniline | ND (0.726) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| 4-Nitrophenol | ND (1.82) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Acenaphthene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Acenaphthylene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Acetophenone | ND (0.726) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Aniline | ND (1.82) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Anthracene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Azobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Benzo(a)anthracene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Benzo(a)pyrene | ND (0.182) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Benzo(b)fluoranthene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Benzo(k)fluoranthene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Butylbenzylphthalate | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Chrysene | ND (0.182) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.182) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Dibenzofuran | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Diethylphthalate | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Dimethylphthalate | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Di-n-butylphthalate | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Di-n-octylphthalate | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Fluoranthene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Fluorene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Hexachlorobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Hexachlorobutadiene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Hexachloroethane | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Isophorone | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Naphthalene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Nitrobenzene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| N-Nitrosodimethylamine | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Pentachlorophenol | ND (1.82) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Phenanthrene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Phenol | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |
| Pyrene | ND (0.362) | | 8270D | | 1 | 12/15/17 5:06 | C7L0225 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *82 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *94 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *83 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *91 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31
Percent Solids: 96
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *73 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *84 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *78 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *107 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type A - Capping Sand - 024
Date Sampled: 12/07/17 07:31

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (102) | | 9060 | | 1 | DEL | 12/17/17 18:04 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.43) | | 6020A | | 20 | NAR | 12/13/17 18:46 | 2.62 | 100 | CL71223 |
| **Arsenic** | **14.2** (2.13) | | 6010C | | 1 | KJK | 12/16/17 3:58 | 2.62 | 100 | CL71223 |
| **Barium** | **25.8** (2.13) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| **Beryllium** | **0.48** (0.09) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| Cadmium | ND (0.43) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| **Chromium** | **51.4** (0.85) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| **Lead** | **31.8** (4.25) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| Mercury | ND (0.032) | | 7471B | | 1 | MJV | 12/13/17 13:35 | 0.68 | 40 | CL71224 |
| **Nickel** | **20.5** (2.13) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| Selenium | ND (0.43) | | 6020A | | 20 | NAR | 12/13/17 18:46 | 2.62 | 100 | CL71223 |
| Silver | ND (0.43) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| **Thallium** | **0.43** (0.43) | | 6020A | | 20 | NAR | 12/13/17 18:46 | 2.62 | 100 | CL71223 |
| **Vanadium** | **14.6** (0.85) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |
| **Zinc** | **29.1** (2.13) | | 6010C | | 1 | KJK | 12/15/17 3:25 | 2.62 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 1,4-Dioxane | ND (0.0832) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 2-Butanone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 2-Hexanone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| 4-Methyl-2-Pentanone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Acetone | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Bromomethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Chloroethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Chloromethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Dichlorodifluoromethane | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Methylene Chloride | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Vinyl Chloride | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Xylene P,M | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | C7L0188 | CL71319 |
| Xylenes (Total) | ND (0.0083) | | 8260B Low | | 1 | 12/13/17 23:54 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *125 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *117 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *99 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 19.4
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0230) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:29 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *69 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 19:47 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *97 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *86 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| 2,4-D | ND (0.052) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.052) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| MCPA | ND (2.57) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |
| MCPP | ND (2.59) | | 8151A | | 1 | 12/21/17 6:13 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *60 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *73 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,4-Dichlorophenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,4-Dimethylphenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,4-Dinitrophenol | ND (1.99) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2-Chloronaphthalene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2-Chlorophenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2-Methylnaphthalene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2-Methylphenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 2-Nitrophenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.796) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 3+4-Methylphenol | ND (0.796) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 4-Chloroaniline | ND (0.796) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| 4-Nitrophenol | ND (1.99) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Acenaphthene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Acenaphthylene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Acetophenone | ND (0.796) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Aniline | ND (1.99) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Anthracene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Azobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Benzo(a)anthracene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Benzo(a)pyrene | ND (0.199) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Benzo(b)fluoranthene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Benzo(k)fluoranthene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Butylbenzylphthalate | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Chrysene | ND (0.199) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.199) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Dibenzofuran | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Diethylphthalate | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Dimethylphthalate | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Di-n-butylphthalate | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Di-n-octylphthalate | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Fluoranthene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Fluorene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Hexachlorobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Hexachlorobutadiene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Hexachloroethane | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Isophorone | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Naphthalene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Nitrobenzene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| N-Nitrosodimethylamine | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Pentachlorophenol | ND (1.99) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Phenanthrene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Phenol | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |
| Pyrene | ND (0.398) | | 8270D | | 1 | 12/15/17 0:20 | C7L0208 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *83 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *118 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *90 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *122 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *92 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *101 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *92 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *100 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 014
Date Sampled: 12/07/17 07:35

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (88.8) | | 9060 | | 1 | DEL | 12/17/17 18:26 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 18:52 | 2.22 | 100 | CL71223 |
| **Arsenic** | **11.6** (2.51) | | 6010C | | 1 | KJK | 12/16/17 4:02 | 2.22 | 100 | CL71223 |
| **Barium** | **24.3** (2.51) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| **Beryllium** | **0.38** (0.11) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| Cadmium | ND (0.50) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| **Chromium** | **50.7** (1.00) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| **Lead** | **27.5** (5.02) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| Mercury | ND (0.029) | | 7471B | | 1 | MJV | 12/13/17 13:37 | 0.75 | 40 | CL71224 |
| **Nickel** | **20.6** (2.51) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| Selenium | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 18:52 | 2.22 | 100 | CL71223 |
| Silver | ND (0.50) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| Thallium | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 18:52 | 2.22 | 100 | CL71223 |
| **Vanadium** | **15.2** (1.00) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |
| **Zinc** | **27.6** (2.51) | | 6010C | | 1 | KJK | 12/15/17 3:29 | 2.22 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 1,4-Dioxane | ND (0.0858) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 2-Butanone | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 2-Hexanone | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| 4-Methyl-2-Pentanone | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Acetone | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Bromomethane | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Chloroethane | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Chloromethane | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Dichlorodifluoromethane | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Methylene Chloride | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Vinyl Chloride | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Xylene P,M | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | C7L0221 | CL71434 |
| Xylenes (Total) | ND (0.0086) | | 8260B Low | | 1 | 12/14/17 16:35 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *116 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *108 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0232) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 4:59 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *91 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *71 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *82 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/12/17 20:05 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *97 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *103 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *86 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| 2,4-D | ND (0.052) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.052) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| MCPA | ND (2.57) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |
| MCPP | ND (2.60) | | 8151A | | 1 | 12/21/17 6:44 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *69 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,4-Dichlorophenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,4-Dimethylphenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,4-Dinitrophenol | ND (1.98) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2-Chloronaphthalene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2-Chlorophenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2-Methylnaphthalene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2-Methylphenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 2-Nitrophenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.792) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 3+4-Methylphenol | ND (0.792) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 4-Chloroaniline | ND (0.792) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| 4-Nitrophenol | ND (1.98) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Acenaphthene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Acenaphthylene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Acetophenone | ND (0.792) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Aniline | ND (1.98) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Anthracene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Azobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Benzo(a)anthracene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Benzo(a)pyrene | ND (0.198) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Benzo(b)fluoranthene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Benzo(k)fluoranthene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Butylbenzylphthalate | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Chrysene | ND (0.198) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.198) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Dibenzofuran | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Diethylphthalate | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Dimethylphthalate | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Di-n-butylphthalate | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Di-n-octylphthalate | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Fluoranthene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Fluorene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Hexachlorobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Hexachlorobutadiene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Hexachloroethane | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Isophorone | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Naphthalene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Nitrobenzene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| N-Nitrosodimethylamine | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Pentachlorophenol | ND (1.98) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Phenanthrene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Phenol | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |
| Pyrene | ND (0.395) | | 8270D | | 1 | 12/15/17 0:55 | C7L0208 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *75 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *96 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *77 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *85 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *79 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *88 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *77 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *90 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 015
Date Sampled: 12/07/17 07:39

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (71.8) | | 9060 | | 1 | DEL | 12/17/17 18:49 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/13/17 18:58 | 2.33 | 100 | CL71223 |
| **Arsenic** | **13.5** (2.38) | | 6010C | | 1 | KJK | 12/16/17 4:06 | 2.33 | 100 | CL71223 |
| **Barium** | **28.9** (2.38) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| **Beryllium** | **0.51** (0.10) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| **Chromium** | **52.3** (0.95) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| **Lead** | **29.5** (4.77) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| Mercury | ND (0.020) | | 7471B | | 1 | MJV | 12/13/17 13:39 | 1.1 | 40 | CL71224 |
| **Nickel** | **20.0** (2.38) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/13/17 18:58 | 2.33 | 100 | CL71223 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| Thallium | ND (0.48) | | 6020A | | 20 | NAR | 12/13/17 18:58 | 2.33 | 100 | CL71223 |
| **Vanadium** | **15.2** (0.95) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |
| **Zinc** | **24.8** (2.38) | | 6010C | | 1 | KJK | 12/15/17 3:33 | 2.33 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,1,1-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,1,2-Trichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,1-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,1-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,1-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2,3-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2,3-Trichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2,4-Trichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2,4-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2-Dibromoethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2-Dichloroethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,3,5-Trimethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,3-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,3-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,4-Dichlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 1,4-Dioxane | ND (0.0842) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 2,2-Dichloropropane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 2-Butanone | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 2-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 2-Hexanone | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 4-Chlorotoluene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 4-Isopropyltoluene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| 4-Methyl-2-Pentanone | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Acetone | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Benzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Bromobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Bromochloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Bromoform | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Bromomethane | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Carbon Disulfide | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Carbon Tetrachloride | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Chlorobenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Chloroethane | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Chloroform | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Chloromethane | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| cis-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| cis-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Dibromomethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Dichlorodifluoromethane | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Diethyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Di-isopropyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Ethyl tertiary-butyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Ethylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Hexachlorobutadiene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Isopropylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Methyl tert-Butyl Ether | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Methylene Chloride | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Naphthalene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| n-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| n-Propylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| sec-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Styrene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| tert-Butylbenzene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Tertiary-amyl methyl ether | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Tetrachloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Tetrahydrofuran | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Toluene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| trans-1,3-Dichloropropene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Trichloroethene | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Trichlorofluoromethane | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Vinyl Chloride | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Xylene O | ND (0.0042) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Xylene P,M | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | C7L0221 | CL71434 |
| Xylenes (Total) | ND (0.0084) | | 8260B Low | | 1 | 12/14/17 17:00 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *118 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *110 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *98 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0222) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:28 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *106 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *69 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *79 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:24 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *79 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *85 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| MCPA | ND (2.53) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |
| MCPP | ND (2.56) | | 8151A | | 1 | 12/21/17 7:16 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *67 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *84 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 1,2-Dichlorobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 1,3-Dichlorobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 1,4-Dichlorobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,4,5-Trichlorophenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,4,6-Trichlorophenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,4-Dichlorophenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,4-Dimethylphenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,4-Dinitrophenol | ND (1.99) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,4-Dinitrotoluene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2,6-Dinitrotoluene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2-Chloronaphthalene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2-Chlorophenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2-Methylnaphthalene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2-Methylphenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 2-Nitrophenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 3,3′-Dichlorobenzidine | ND (0.794) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 3+4-Methylphenol | ND (0.794) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 4-Bromophenyl-phenylether | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 4-Chloroaniline | ND (0.794) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| 4-Nitrophenol | ND (1.99) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Acenaphthene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Acenaphthylene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Acetophenone | ND (0.794) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Aniline | ND (1.99) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Anthracene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Azobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Benzo(a)anthracene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Benzo(a)pyrene | ND (0.199) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Benzo(b)fluoranthene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Benzo(g,h,i)perylene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Benzo(k)fluoranthene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| bis(2-Chloroethyl)ether | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| bis(2-chloroisopropyl)Ether | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| bis(2-Ethylhexyl)phthalate | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Butylbenzylphthalate | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Chrysene | ND (0.199) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Dibenzo(a,h)Anthracene | ND (0.199) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Dibenzofuran | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Diethylphthalate | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Dimethylphthalate | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Di-n-butylphthalate | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Di-n-octylphthalate | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Fluoranthene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Fluorene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Hexachlorobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Hexachlorobutadiene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Hexachloroethane | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Indeno(1,2,3-cd)Pyrene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Isophorone | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Naphthalene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Nitrobenzene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| N-Nitrosodimethylamine | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Pentachlorophenol | ND (1.99) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Phenanthrene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Phenol | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |
| Pyrene | ND (0.396) | | 8270D | | 1 | 12/15/17 1:30 | C7L0208 | CL71211 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *80 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *98 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *80 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *88 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 11:00

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *110 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *93 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *79 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *88 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 016
Date Sampled: 12/07/17 07:43

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (66.0) | | 9060 | | 1 | DEL | 12/17/17 19:10 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 19:04 | 2.23 | 100 | CL71223 |
| **Arsenic** | **12.3** (2.48) | | 6010C | | 1 | KJK | 12/16/17 4:10 | 2.23 | 100 | CL71223 |
| **Barium** | **27.2** (2.48) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| **Beryllium** | **0.41** (0.11) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| Cadmium | ND (0.50) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| **Chromium** | **53.4** (0.99) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| **Lead** | **26.0** (4.96) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| Mercury | ND (0.038) | | 7471B | | 1 | MJV | 12/13/17 13:41 | 0.58 | 40 | CL71224 |
| **Nickel** | **20.6** (2.48) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| Selenium | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 19:04 | 2.23 | 100 | CL71223 |
| Silver | ND (0.50) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| Thallium | ND (0.50) | | 6020A | | 20 | NAR | 12/13/17 19:04 | 2.23 | 100 | CL71223 |
| **Vanadium** | **15.2** (0.99) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |
| **Zinc** | **26.1** (2.48) | | 6010C | | 1 | KJK | 12/15/17 3:37 | 2.23 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,1,1-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,1,2-Trichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,1-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,1-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,1-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2,3-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2,3-Trichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2,4-Trichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2,4-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2-Dibromoethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2-Dichloroethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,3,5-Trimethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,3-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,3-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,4-Dichlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 1,4-Dioxane | ND (0.0850) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 2,2-Dichloropropane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 2-Butanone | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 2-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 2-Hexanone | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 4-Chlorotoluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 4-Isopropyltoluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| 4-Methyl-2-Pentanone | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Acetone | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Benzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Bromobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Bromochloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Bromoform | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Bromomethane | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Carbon Disulfide | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Carbon Tetrachloride | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Chlorobenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Chloroethane | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Chloroform | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Chloromethane | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| cis-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| cis-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Dibromomethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Dichlorodifluoromethane | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Diethyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Di-isopropyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Ethyl tertiary-butyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Ethylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Hexachlorobutadiene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Isopropylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Methyl tert-Butyl Ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Methylene Chloride | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Naphthalene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| n-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| n-Propylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| sec-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Styrene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| tert-Butylbenzene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Tertiary-amyl methyl ether | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Tetrachloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Tetrahydrofuran | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Toluene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 6.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| trans-1,3-Dichloropropene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Trichloroethene | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Trichlorofluoromethane | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Vinyl Chloride | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Xylene O | ND (0.0043) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Xylene P,M | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | C7L0221 | CL71434 |
| Xylenes (Total) | ND (0.0085) | | 8260B Low | | 1 | 12/14/17 17:25 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *118 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *109 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0226) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/15/17 5:57 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *99 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *111 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *71 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 20:43 | | CL71114 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *102 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *87 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| Dalapon | ND (0.050) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| MCPA [2C] | # ND (2.54) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |
| MCPP [2C] | # ND (2.57) | | 8151A | | 1 | 12/21/17 7:48 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *65 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *75 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 1,2-Dichlorobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 1,3-Dichlorobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 1,4-Dichlorobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,4,5-Trichlorophenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,4,6-Trichlorophenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,4-Dichlorophenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,4-Dimethylphenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,4-Dinitrophenol | ND (1.98) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,4-Dinitrotoluene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2,6-Dinitrotoluene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2-Chloronaphthalene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2-Chlorophenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2-Methylnaphthalene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2-Methylphenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 2-Nitrophenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 3,3′-Dichlorobenzidine | ND (0.790) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 3+4-Methylphenol | ND (0.790) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 4-Bromophenyl-phenylether | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 4-Chloroaniline | ND (0.790) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| 4-Nitrophenol | ND (1.98) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Acenaphthene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Acenaphthylene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Acetophenone | ND (0.790) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Aniline | ND (1.98) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Anthracene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Azobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Benzo(a)anthracene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Benzo(a)pyrene | ND (0.198) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Benzo(b)fluoranthene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Benzo(g,h,i)perylene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Benzo(k)fluoranthene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| bis(2-Chloroethyl)ether | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| bis(2-chloroisopropyl)Ether | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| bis(2-Ethylhexyl)phthalate | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Butylbenzylphthalate | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Chrysene | ND (0.198) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Dibenzo(a,h)Anthracene | ND (0.198) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Dibenzofuran | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Diethylphthalate | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Dimethylphthalate | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Di-n-butylphthalate | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Di-n-octylphthalate | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Fluoranthene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Fluorene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Hexachlorobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Hexachlorobutadiene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Hexachloroethane | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Indeno(1,2,3-cd)Pyrene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Isophorone | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Naphthalene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Nitrobenzene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| N-Nitrosodimethylamine | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Pentachlorophenol | ND (1.98) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Phenanthrene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Phenol | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |
| Pyrene | ND (0.394) | | 8270D | | 1 | 12/15/17 2:05 | C7L0208 | CL71216 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *95 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *77 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *86 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47
Percent Solids: 90
Initial Volume: 14
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *114 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *89 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *79 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *92 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 017
Date Sampled: 12/07/17 07:47

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (91.4) | | 9060 | | 1 | DEL | 12/17/17 20:06 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 12/13/17 19:09 | 2.37 | 100 | CL71223 |
| **Arsenic** | **11.5** (2.37) | | 6010C | | 1 | KJK | 12/16/17 4:26 | 2.37 | 100 | CL71223 |
| **Barium** | **24.4** (2.37) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| **Beryllium** | **0.39** (0.10) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| **Chromium** | **49.7** (0.95) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| **Lead** | **30.8** (4.73) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| Mercury | ND (0.034) | | 7471B | | 1 | MJV | 12/13/17 13:47 | 0.65 | 40 | CL71224 |
| **Nickel** | **20.0** (2.37) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 12/13/17 19:09 | 2.37 | 100 | CL71223 |
| Silver | ND (0.47) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| Thallium | ND (0.47) | | 6020A | | 20 | NAR | 12/13/17 19:09 | 2.37 | 100 | CL71223 |
| **Vanadium** | **14.7** (0.95) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |
| **Zinc** | **26.8** (2.37) | | 6010C | | 1 | KJK | 12/15/17 3:41 | 2.37 | 100 | CL71223 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,1,1-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,1,2-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,1-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,1-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,1-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2,3-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2,3-Trichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2,4-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2,4-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2-Dibromoethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,3,5-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,3-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,3-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,4-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 1,4-Dioxane | ND (0.0890) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 2,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 2-Butanone | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 2-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 2-Hexanone | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 4-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 4-Isopropyltoluene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| 4-Methyl-2-Pentanone | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Acetone | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Benzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Bromobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Bromochloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Bromoform | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Bromomethane | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Carbon Disulfide | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Carbon Tetrachloride | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Chlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Chloroethane | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Chloroform | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Chloromethane | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| cis-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| cis-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Dibromomethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Dichlorodifluoromethane | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Diethyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Di-isopropyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Ethyl tertiary-butyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Ethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Hexachlorobutadiene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Isopropylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Methyl tert-Butyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Methylene Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Naphthalene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| n-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| n-Propylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| sec-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Styrene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| tert-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Tertiary-amyl methyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Tetrachloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Tetrahydrofuran | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Toluene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| trans-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Trichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Trichlorofluoromethane | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Vinyl Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Xylene O | ND (0.0044) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Xylene P,M | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | C7L0221 | CL71434 |
| Xylenes (Total) | ND (0.0089) | | 8260B Low | | 1 | 12/14/17 17:50 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *119 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *96 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *111 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 19.1
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/12/17 16:18

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Chlordane (Total) | ND (0.0235) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| gamma-BHC (Lindane) | ND (0.0018) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/15/17 6:27 | C7L0182 | CL71208 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *104 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *114 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *83 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/11/17 17:15

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/12/17 21:01 | | CL71114 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *55 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *58 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *42 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *46 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 15:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.011) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| 2,4,5-TP (Silvex) | ND (0.011) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| 2,4-D | ND (0.052) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| 2,4-DB | ND (0.053) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| Dalapon | ND (0.051) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| Dichlorprop | ND (0.052) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| Dinoseb | ND (0.053) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| MCPA | ND (2.58) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |
| MCPP | ND (2.61) | | 8151A | | 1 | 12/21/17 8:20 | C7L0310 | CL71832 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *62 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *69 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 1,2-Dichlorobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 1,3-Dichlorobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 1,4-Dichlorobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,4,5-Trichlorophenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,4,6-Trichlorophenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,4-Dichlorophenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,4-Dimethylphenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,4-Dinitrophenol | ND (1.92) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,4-Dinitrotoluene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2,6-Dinitrotoluene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2-Chloronaphthalene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2-Chlorophenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2-Methylnaphthalene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2-Methylphenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 2-Nitrophenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 3,3′-Dichlorobenzidine | ND (0.768) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 3+4-Methylphenol | ND (0.768) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 4-Bromophenyl-phenylether | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 4-Chloroaniline | ND (0.768) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| 4-Nitrophenol | ND (1.92) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Acenaphthene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Acenaphthylene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Acetophenone | ND (0.768) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Aniline | ND (1.92) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Anthracene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Azobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Benzo(a)anthracene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Benzo(a)pyrene | ND (0.192) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Benzo(b)fluoranthene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Benzo(g,h,i)perylene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Benzo(k)fluoranthene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| bis(2-Chloroethyl)ether | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| bis(2-chloroisopropyl)Ether | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| bis(2-Ethylhexyl)phthalate | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Butylbenzylphthalate | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Chrysene | ND (0.192) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Dibenzo(a,h)Anthracene | ND (0.192) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Dibenzofuran | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Diethylphthalate | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Dimethylphthalate | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Di-n-butylphthalate | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Di-n-octylphthalate | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Fluoranthene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Fluorene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Hexachlorobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Hexachlorobutadiene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Hexachloroethane | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Indeno(1,2,3-cd)Pyrene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Isophorone | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Naphthalene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Nitrobenzene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| N-Nitrosodimethylamine | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Pentachlorophenol | ND (1.92) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Phenanthrene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Phenol | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |
| Pyrene | ND (0.384) | | 8270D | | 1 | 12/15/17 2:40 | C7L0208 | CL71216 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *76 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *95 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *79 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *87 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51
Percent Solids: 89
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/12/17 12:15

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *118 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *89 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *80 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *91 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 018
Date Sampled: 12/07/17 07:51

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| Total Organic Carbon (Average) | ND (80.0) | | 9060 | | 1 | DEL | 12/17/17 20:24 | mg/kg dry wt | [CALC] |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 1,4-Dioxane | ND (0.100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 2-Butanone | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 2-Hexanone | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| 4-Methyl-2-Pentanone | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Acetone | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Bromomethane | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Chloroethane | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Chloromethane | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Dichlorodifluoromethane | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Methylene Chloride | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Trip Blank
Date Sampled: 12/07/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712199
ESS Laboratory Sample ID: 1712199-11
Sample Matrix: Solid
Units: mg/kg
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Vinyl Chloride | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Xylene P,M | ND (0.0100) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |
| Xylenes (Total) | ND (0.0075) | | 8260B Low | | 1 | 12/14/17 15:20 | C7L0221 | CL71434 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *110 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *105 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *100 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CL71223 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Antimony | ND | 0.50 | mg/kg wet | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Selenium | ND | 0.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Thallium | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 56.0 | 4.72 | mg/kg wet | 48.00 | | 117 | 80-120 | | | |
| Arsenic | 109 | 9.43 | mg/kg wet | 123.0 | | 88 | 80-120 | | | |
| Barium | 204 | 9.43 | mg/kg wet | 253.0 | | 81 | 66-134 | | | |
| Beryllium | 180 | 0.42 | mg/kg wet | 192.0 | | 94 | 80-120 | | | |
| Cadmium | 207 | 1.89 | mg/kg wet | 224.0 | | 93 | 80-120 | | | |
| Chromium | 169 | 3.77 | mg/kg wet | 179.0 | | 94 | 80-120 | | | |
| Lead | 140 | 18.9 | mg/kg wet | 145.0 | | 96 | 80-120 | | | |
| Nickel | 126 | 9.43 | mg/kg wet | 143.0 | | 88 | 80-120 | | | |
| Selenium | 39.3 | 4.72 | mg/kg wet | 42.40 | | 93 | 80-120 | | | |
| Silver | 85.3 | 1.89 | mg/kg wet | 81.60 | | 105 | 80-120 | | | |
| Thallium | 50.9 | 4.72 | mg/kg wet | 52.00 | | 98 | 80-120 | | | |
| Vanadium | 64.6 | 3.77 | mg/kg wet | 72.30 | | 89 | 80-120 | | | |
| Zinc | 705 | 9.43 | mg/kg wet | 770.0 | | 92 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 55.5 | 4.55 | mg/kg wet | 48.00 | | 116 | 80-120 | 1 | 30 | |
| Arsenic | 109 | 9.09 | mg/kg wet | 123.0 | | 88 | 80-120 | 0.1 | 20 | |
| Barium | 188 | 9.09 | mg/kg wet | 253.0 | | 74 | 66-134 | 8 | 20 | |
| Beryllium | 181 | 0.40 | mg/kg wet | 192.0 | | 94 | 80-120 | 0.5 | 20 | |
| Cadmium | 204 | 1.82 | mg/kg wet | 224.0 | | 91 | 80-120 | 2 | 20 | |
| Chromium | 167 | 3.64 | mg/kg wet | 179.0 | | 94 | 80-120 | 1 | 20 | |
| Lead | 138 | 18.2 | mg/kg wet | 145.0 | | 95 | 80-120 | 1 | 20 | |
| Nickel | 122 | 9.09 | mg/kg wet | 143.0 | | 86 | 80-120 | 3 | 20 | |
| Selenium | 39.7 | 4.55 | mg/kg wet | 42.40 | | 94 | 80-120 | 0.9 | 30 | |
| Silver | 84.0 | 1.82 | mg/kg wet | 81.60 | | 103 | 80-120 | 1 | 20 | |
| Thallium | 51.1 | 4.55 | mg/kg wet | 52.00 | | 98 | 80-120 | 0.6 | 30 | |
| Vanadium | 62.5 | 3.64 | mg/kg wet | 72.30 | | 86 | 80-120 | 3 | 20 | |
| Zinc | 694 | 9.09 | mg/kg wet | 770.0 | | 90 | 80-120 | 2 | 20 | |
| **Batch CL71224 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CL71224 - 7471B** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 17.2 | 1.80 | mg/kg wet | 17.80 | | 97 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 18.6 | 1.74 | mg/kg wet | 17.80 | | 104 | 80-120 | 8 | 20 | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0557* | | mg/kg wet | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0477* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0537* | | mg/kg wet | *0.05000* | | *107* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0499* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0627 | 0.0050 | mg/kg wet | 0.05000 | | 125 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0462 | 0.0020 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| 1,1,2-Trichloroethane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0555 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0477 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0586 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,4-Dioxane | 0.885 | 0.100 | mg/kg wet | 1.000 | | 89 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0594 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | | | |
| 2-Butanone | 0.263 | 0.0100 | mg/kg wet | 0.2500 | | 105 | 70-130 | | | |
| 2-Chlorotoluene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| 2-Hexanone | 0.201 | 0.0100 | mg/kg wet | 0.2500 | | 80 | 70-130 | | | |
| 4-Chlorotoluene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.226 | 0.0100 | mg/kg wet | 0.2500 | | 90 | 70-130 | | | |
| Acetone | 0.265 | 0.0100 | mg/kg wet | 0.2500 | | 106 | 70-130 | | | |
| Benzene | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Bromobenzene | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Bromochloromethane | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Bromodichloromethane | 0.0618 | 0.0050 | mg/kg wet | 0.05000 | | 124 | 70-130 | | | |
| Bromoform | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Bromomethane | 0.0535 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Carbon Disulfide | 0.0555 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Carbon Tetrachloride | 0.0606 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | | | |
| Chlorobenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Chloroethane | 0.0509 | 0.0100 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Chloroform | 0.0556 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Chloromethane | 0.0528 | 0.0100 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Dibromochloromethane | 0.0477 | 0.0020 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |
| Dibromomethane | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0517 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Diethyl Ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Di-isopropyl ether | 0.0476 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| Ethyl tertiary-butyl ether | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Ethylbenzene | 0.0472 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Hexachlorobutadiene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Isopropylbenzene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Methylene Chloride | 0.0538 | 0.0100 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Naphthalene | 0.0390 | 0.0050 | mg/kg wet | 0.05000 | | 78 | 70-130 | | | |
| n-Butylbenzene | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| n-Propylbenzene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| sec-Butylbenzene | 0.0393 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Styrene | 0.0418 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| tert-Butylbenzene | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Tetrachloroethene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Tetrahydrofuran | 0.0394 | 0.0050 | mg/kg wet | 0.05000 | | 79 | 70-130 | | | |
| Toluene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Trichloroethene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Trichlorofluoromethane | 0.0591 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| Vinyl Chloride | 0.0555 | 0.0100 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Xylene O | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | | | |
| Xylene P,M | 0.0949 | 0.0100 | mg/kg wet | 0.1000 | | 95 | 70-130 | | | |
| Xylenes (Total) | 0.143 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0612* | | mg/kg wet | *0.05000* | | *122* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0515* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0585* | | mg/kg wet | *0.05000* | | *117* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0479* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| 1,1,1-Trichloroethane | 0.0597 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | 5 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0472 | 0.0020 | mg/kg wet | 0.05000 | | 94 | 70-130 | 2 | 20 | |
| 1,1,2-Trichloroethane | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 7 | 20 | |
| 1,1-Dichloroethane | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| 1,1-Dichloropropene | 0.0557 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | 0.3 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| 1,2,3-Trichloropropane | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 9 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,2-Dibromoethane | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 7 | 20 | |
| 1,2-Dichlorobenzene | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 20 | |
| 1,2-Dichloroethane | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 9 | 20 | |
| 1,2-Dichloropropane | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 5 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| 1,3-Dichlorobenzene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 5 | 20 | |
| 1,3-Dichloropropane | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| 1,4-Dichlorobenzene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 20 | |
| 1,4-Dioxane | 0.881 | 0.100 | mg/kg wet | 1.000 | | 88 | 70-130 | 0.5 | 20 | |
| 2,2-Dichloropropane | 0.0595 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | 0.1 | 20 | |
| 2-Butanone | 0.257 | 0.0100 | mg/kg wet | 0.2500 | | 103 | 70-130 | 2 | 20 | |
| 2-Chlorotoluene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| 2-Hexanone | 0.223 | 0.0100 | mg/kg wet | 0.2500 | | 89 | 70-130 | 10 | 20 | |
| 4-Chlorotoluene | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| 4-Isopropyltoluene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| 4-Methyl-2-Pentanone | 0.219 | 0.0100 | mg/kg wet | 0.2500 | | 88 | 70-130 | 3 | 20 | |
| Acetone | 0.311 | 0.0100 | mg/kg wet | 0.2500 | | 125 | 70-130 | 16 | 20 | |
| Benzene | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 4 | 20 | |
| Bromobenzene | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 5 | 20 | |
| Bromochloromethane | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 7 | 20 | |
| Bromodichloromethane | 0.0571 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 8 | 20 | |
| Bromoform | 0.0564 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 4 | 20 | |
| Bromomethane | 0.0513 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| Carbon Disulfide | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 2 | 20 | |
| Carbon Tetrachloride | 0.0574 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 5 | 20 | |
| Chlorobenzene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 8 | 20 | |
| Chloroethane | 0.0517 | 0.0100 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Chloroform | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 7 | 20 | |
| Chloromethane | 0.0543 | 0.0100 | mg/kg wet | 0.05000 | | 109 | 70-130 | 3 | 20 | |
| cis-1,2-Dichloroethene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| cis-1,3-Dichloropropene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| Dibromochloromethane | 0.0489 | 0.0020 | mg/kg wet | 0.05000 | | 98 | 70-130 | 3 | 20 | |
| Dibromomethane | 0.0484 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 9 | 20 | |
| Dichlorodifluoromethane | 0.0510 | 0.0100 | mg/kg wet | 0.05000 | | 102 | 70-130 | 1 | 20 | |
| Diethyl Ether | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 0.6 | 20 | |
| Di-isopropyl ether | 0.0465 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 2 | 20 | |
| Ethyl tertiary-butyl ether | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| Ethylbenzene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 10 | 20 | |
| Hexachlorobutadiene | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 6 | 20 | |
| Isopropylbenzene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 7 | 20 | |
| Methyl tert-Butyl Ether | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Methylene Chloride | 0.0505 | 0.0100 | mg/kg wet | 0.05000 | | 101 | 70-130 | 6 | 20 | |
| Naphthalene | 0.0426 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 9 | 20 | |
| n-Butylbenzene | 0.0515 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| n-Propylbenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 6 | 20 | |
| sec-Butylbenzene | 0.0405 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | 3 | 20 | |
| Styrene | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 9 | 20 | |
| tert-Butylbenzene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 6 | 20 | |
| Tertiary-amyl methyl ether | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 2 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71319 - 5035** | | | | | | | | | | |
| Tetrachloroethene | 0.0505 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 11 | 20 | |
| Tetrahydrofuran | 0.0402 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | 2 | 20 | |
| Toluene | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 20 | |
| trans-1,2-Dichloroethene | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| trans-1,3-Dichloropropene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 1 | 20 | |
| Trichloroethene | 0.0507 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| Trichlorofluoromethane | 0.0573 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 3 | 20 | |
| Vinyl Chloride | 0.0562 | 0.0100 | mg/kg wet | 0.05000 | | 112 | 70-130 | 1 | 20 | |
| Xylene O | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 7 | 20 | |
| Xylene P,M | 0.103 | 0.0100 | mg/kg wet | 0.1000 | | 103 | 70-130 | 8 | 20 | |
| Xylenes (Total) | 0.155 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0538* | | mg/kg wet | *0.05000* | | *108* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0531* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0526* | | mg/kg wet | *0.05000* | | *105* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0506* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0529* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0480* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0522* | | mg/kg wet | *0.05000* | | *104* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0501* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0610 | 0.0050 | mg/kg wet | 0.05000 | | 122 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0488 | 0.0020 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0545 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0572 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0552 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0553 | 0.0050 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0551 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dioxane | 0.905 | 0.100 | mg/kg wet | 1.000 | | 91 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0595 | 0.0050 | mg/kg wet | 0.05000 | | 119 | 70-130 | | | |
| 2-Butanone | 0.250 | 0.0100 | mg/kg wet | 0.2500 | | 100 | 70-130 | | | |
| 2-Chlorotoluene | 0.0536 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 2-Hexanone | 0.205 | 0.0100 | mg/kg wet | 0.2500 | | 82 | 70-130 | | | |
| 4-Chlorotoluene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.214 | 0.0100 | mg/kg wet | 0.2500 | | 85 | 70-130 | | | |
| Acetone | 0.249 | 0.0100 | mg/kg wet | 0.2500 | | 100 | 70-130 | | | |
| Benzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Bromobenzene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromochloromethane | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Bromodichloromethane | 0.0598 | 0.0050 | mg/kg wet | 0.05000 | | 120 | 70-130 | | | |
| Bromoform | 0.0548 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Bromomethane | 0.0536 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Carbon Disulfide | 0.0549 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Carbon Tetrachloride | 0.0584 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | | | |
| Chlorobenzene | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Chloroethane | 0.0530 | 0.0100 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Chloroform | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| Chloromethane | 0.0554 | 0.0100 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Dibromochloromethane | 0.0492 | 0.0020 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Dibromomethane | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0540 | 0.0100 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Diethyl Ether | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Di-isopropyl ether | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| Ethylbenzene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Hexachlorobutadiene | 0.0586 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | | | |
| Isopropylbenzene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Methylene Chloride | 0.0526 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Naphthalene | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| n-Butylbenzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| n-Propylbenzene | 0.0545 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| sec-Butylbenzene | 0.0433 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Styrene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| tert-Butylbenzene | 0.0552 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Tetrachloroethene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Tetrahydrofuran | 0.0404 | 0.0050 | mg/kg wet | 0.05000 | | 81 | 70-130 | | | |
| Toluene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Trichloroethene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Trichlorofluoromethane | 0.0578 | 0.0050 | mg/kg wet | 0.05000 | | 116 | 70-130 | | | |
| Vinyl Chloride | 0.0569 | 0.0100 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| Xylene O | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Xylene P,M | 0.104 | 0.0100 | mg/kg wet | 0.1000 | | 104 | 70-130 | | | |
| Xylenes (Total) | 0.157 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0531* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0504* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0530* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0490* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,1,1-Trichloroethane | 0.0570 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 7 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0483 | 0.0020 | mg/kg wet | 0.05000 | | 97 | 70-130 | 1 | 20 | |
| 1,1,2-Trichloroethane | 0.0492 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 3 | 20 | |
| 1,1-Dichloroethane | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 6 | 20 | |
| 1,1-Dichloroethene | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 6 | 20 | |
| 1,1-Dichloropropene | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 6 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.9 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| 1,2,3-Trichloropropane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.4 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 1 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 4 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 20 | |
| 1,2-Dibromoethane | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 5 | 20 | |
| 1,2-Dichlorobenzene | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| 1,2-Dichloroethane | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| 1,2-Dichloropropane | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 3 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| 1,3-Dichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 1 | 20 | |
| 1,3-Dichloropropane | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 4 | 20 | |
| 1,4-Dichlorobenzene | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 6 | 20 | |
| 1,4-Dioxane | 0.939 | 0.100 | mg/kg wet | 1.000 | | 94 | 70-130 | 4 | 20 | |
| 2,2-Dichloropropane | 0.0560 | 0.0050 | mg/kg wet | 0.05000 | | 112 | 70-130 | 6 | 20 | |
| 2-Butanone | 0.247 | 0.0100 | mg/kg wet | 0.2500 | | 99 | 70-130 | 1 | 20 | |
| 2-Chlorotoluene | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 5 | 20 | |
| 2-Hexanone | 0.204 | 0.0100 | mg/kg wet | 0.2500 | | 82 | 70-130 | 0.6 | 20 | |
| 4-Chlorotoluene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 3 | 20 | |
| 4-Isopropyltoluene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| 4-Methyl-2-Pentanone | 0.218 | 0.0100 | mg/kg wet | 0.2500 | | 87 | 70-130 | 2 | 20 | |
| Acetone | 0.246 | 0.0100 | mg/kg wet | 0.2500 | | 98 | 70-130 | 1 | 20 | |
| Benzene | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| Bromobenzene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| Bromochloromethane | 0.0490 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 4 | 20 | |
| Bromodichloromethane | 0.0570 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | 5 | 20 | |
| Bromoform | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 3 | 20 | |
| Bromomethane | 0.0500 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 7 | 20 | |
| Carbon Disulfide | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 6 | 20 | |
| Carbon Tetrachloride | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 7 | 20 | |
| Chlorobenzene | 0.0483 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 6 | 20 | |
| Chloroethane | 0.0500 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 6 | 20 | |
| Chloroform | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| Chloromethane | 0.0536 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 3 | 20 | |
| cis-1,2-Dichloroethene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| cis-1,3-Dichloropropene | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| Dibromochloromethane | 0.0480 | 0.0020 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |
| Dibromomethane | 0.0485 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 4 | 20 | |
| Dichlorodifluoromethane | 0.0504 | 0.0100 | mg/kg wet | 0.05000 | | 101 | 70-130 | 7 | 20 | |
| Diethyl Ether | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| Di-isopropyl ether | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |
| Ethyl tertiary-butyl ether | 0.0501 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Ethylbenzene | 0.0491 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 6 | 20 | |
| Hexachlorobutadiene | 0.0563 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 4 | 20 | |
| Isopropylbenzene | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| Methyl tert-Butyl Ether | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 0.8 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71434 - 5035** | | | | | | | | | | |
| Methylene Chloride | 0.0502 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| Naphthalene | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 1 | 20 | |
| n-Butylbenzene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| n-Propylbenzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| sec-Butylbenzene | 0.0414 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | 4 | 20 | |
| Styrene | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| tert-Butylbenzene | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 5 | 20 | |
| Tertiary-amyl methyl ether | 0.0500 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 0.6 | 20 | |
| Tetrachloroethene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 7 | 20 | |
| Tetrahydrofuran | 0.0421 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | 4 | 20 | |
| Toluene | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 5 | 20 | |
| trans-1,2-Dichloroethene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 4 | 20 | |
| trans-1,3-Dichloropropene | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 2 | 20 | |
| Trichloroethene | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 5 | 20 | |
| Trichlorofluoromethane | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 7 | 20 | |
| Vinyl Chloride | 0.0533 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 6 | 20 | |
| Xylene O | 0.0495 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 7 | 20 | |
| Xylene P,M | 0.0975 | 0.0100 | mg/kg wet | 0.1000 | | 97 | 70-130 | 6 | 20 | |
| Xylenes (Total) | 0.147 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0545* | | mg/kg wet | *0.05000* | | *109* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0501* | | mg/kg wet | *0.05000* | | *100* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0529* | | mg/kg wet | *0.05000* | | *106* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0483* | | mg/kg wet | *0.05000* | | *97* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Chlordane (Total) | ND | 0.0200 | mg/kg wet | | | | | | | |
| Chlordane (Total) [2C] | ND | 0.0200 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0112* | | mg/kg wet | *0.01250* | | *90* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0118* | | mg/kg wet | *0.01250* | | *94* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00905* | | mg/kg wet | *0.01250* | | *72* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0101* | | mg/kg wet | *0.01250* | | *81* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| 4,4´-DDE | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| 4,4´-DDT | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Aldrin | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 67 | 40-140 | | | |
| Aldrin [2C] | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| alpha-BHC | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| alpha-BHC [2C] | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| alpha-Chlordane | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| beta-BHC | 0.0086 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | | | |
| beta-BHC [2C] | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| delta-BHC | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| delta-BHC [2C] | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| Dieldrin [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | | | |
| Endosulfan I | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| Endosulfan I [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Endosulfan II | 0.0086 | 0.0025 | mg/kg wet | 0.01250 | | 68 | 40-140 | | | |
| Endosulfan II [2C] | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| Endosulfan Sulfate | 0.0087 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Endrin | 0.0093 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| Endrin [2C] | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| Endrin Ketone | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0089 | 0.0015 | mg/kg wet | 0.01250 | | 71 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0100 | 0.0015 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| gamma-Chlordane | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Heptachlor | 0.0080 | 0.0025 | mg/kg wet | 0.01250 | | 64 | 40-140 | | | |
| Heptachlor [2C] | 0.0078 | 0.0025 | mg/kg wet | 0.01250 | | 62 | 40-140 | | | |
| Heptachlor Epoxide | 0.0094 | 0.0025 | mg/kg wet | 0.01250 | | 75 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Hexachlorobenzene | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| Methoxychlor | 0.0084 | 0.0025 | mg/kg wet | 0.01250 | | 67 | 40-140 | | | |
| Methoxychlor [2C] | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 66 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0121* | | mg/kg wet | *0.01250* | | *97* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0128* | | mg/kg wet | *0.01250* | | *102* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00967* | | mg/kg wet | *0.01250* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0105* | | mg/kg wet | *0.01250* | | *84* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 6 | 30 | |
| 4,4´-DDD [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 9 | 30 | |
| 4,4´-DDE | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 5 | 30 | |
| 4,4´-DDE [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 8 | 30 | |
| 4,4´-DDT | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 3 | 30 | |
| 4,4´-DDT [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 7 | 30 | |
| Aldrin | 0.0089 | 0.0025 | mg/kg wet | 0.01250 | | 71 | 40-140 | 7 | 30 | |
| Aldrin [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 9 | 30 | |
| alpha-BHC | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 8 | 30 | |
| alpha-BHC [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 10 | 30 | |
| alpha-Chlordane | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 6 | 30 | |
| alpha-Chlordane [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 9 | 30 | |
| beta-BHC | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 7 | 30 | |
| beta-BHC [2C] | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 8 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71208 - 3546** | | | | | | | | | | |
| delta-BHC | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | 8 | 30 | |
| delta-BHC [2C] | 0.0114 | 0.0025 | mg/kg wet | 0.01250 | | 92 | 40-140 | 9 | 30 | |
| Dieldrin | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| Dieldrin [2C] | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | 8 | 30 | |
| Endosulfan I | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 6 | 30 | |
| Endosulfan I [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 9 | 30 | |
| Endosulfan II | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | 6 | 30 | |
| Endosulfan II [2C] | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 9 | 30 | |
| Endosulfan Sulfate | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | 6 | 30 | |
| Endosulfan Sulfate [2C] | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 9 | 30 | |
| Endrin | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | 5 | 30 | |
| Endrin [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 8 | 30 | |
| Endrin Ketone | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 7 | 30 | |
| Endrin Ketone [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 9 | 30 | |
| gamma-BHC (Lindane) | 0.0097 | 0.0015 | mg/kg wet | 0.01250 | | 78 | 40-140 | 9 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0110 | 0.0015 | mg/kg wet | 0.01250 | | 88 | 40-140 | 10 | 30 | |
| gamma-Chlordane | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | 6 | 30 | |
| gamma-Chlordane [2C] | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 9 | 30 | |
| Heptachlor | 0.0083 | 0.0025 | mg/kg wet | 0.01250 | | 66 | 40-140 | 4 | 30 | |
| Heptachlor [2C] | 0.0081 | 0.0025 | mg/kg wet | 0.01250 | | 65 | 40-140 | 4 | 30 | |
| Heptachlor Epoxide | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 7 | 30 | |
| Heptachlor Epoxide [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 9 | 30 | |
| Hexachlorobenzene | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 7 | 30 | |
| Hexachlorobenzene [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | 9 | 30 | |
| Methoxychlor | 0.0087 | 0.0025 | mg/kg wet | 0.01250 | | 69 | 40-140 | 3 | 30 | |
| Methoxychlor [2C] | 0.0088 | 0.0025 | mg/kg wet | 0.01250 | | 70 | 40-140 | 6 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0126* | | mg/kg wet | *0.01250* | | *101* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0136* | | mg/kg wet | *0.01250* | | *108* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00999* | | mg/kg wet | *0.01250* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0110* | | mg/kg wet | *0.01250* | | *88* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71114 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71114 - 3540C** | | | | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0191* | | mg/kg wet | *0.02500* | | *76* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0206* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0165* | | mg/kg wet | *0.02500* | | *66* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0190* | | mg/kg wet | *0.02500* | | *76* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 94 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 99 | 40-140 | | | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 92 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0244* | | mg/kg wet | *0.02500* | | *98* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0247* | | mg/kg wet | *0.02500* | | *99* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0223* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0222* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 95 | 40-140 | 2 | 30 | |
| Aroclor 1016 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 101 | 40-140 | 2 | 30 | |
| Aroclor 1260 | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 104 | 40-140 | 3 | 30 | |
| Aroclor 1260 [2C] | 0.5 | 0.05 | mg/kg wet | 0.5000 | | 94 | 40-140 | 2 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0243* | | mg/kg wet | *0.02500* | | *97* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0250* | | mg/kg wet | *0.02500* | | *100* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0215* | | mg/kg wet | *0.02500* | | *86* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0223* | | mg/kg wet | *0.02500* | | *89* | *30-150* | | | |
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71832 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71832 - 3546** | | | | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.114* | | mg/kg wet | *0.2000* | | *57* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.122* | | mg/kg wet | *0.2000* | | *61* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.011 | 0.010 | mg/kg wet | 0.01900 | | 56 | 40-140 | | | |
| 2,4,5-T [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 62 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.011 | 0.010 | mg/kg wet | 0.01900 | | 60 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 62 | 40-140 | | | |
| 2,4-D | 0.098 | 0.047 | mg/kg wet | 0.1880 | | 52 | 40-140 | | | |
| 2,4-D [2C] | 0.111 | 0.047 | mg/kg wet | 0.1880 | | 59 | 40-140 | | | |
| 2,4-DB | 0.112 | 0.048 | mg/kg wet | 0.1900 | | 59 | 40-140 | | | |
| 2,4-DB [2C] | 0.110 | 0.048 | mg/kg wet | 0.1900 | | 58 | 40-140 | | | |
| Dalapon | 0.210 | 0.046 | mg/kg wet | 0.4550 | | 46 | 40-140 | | | |
| Dalapon [2C] | 0.268 | 0.046 | mg/kg wet | 0.4550 | | 59 | 40-140 | | | |
| Dicamba | 0.011 | 0.009 | mg/kg wet | 0.01880 | | 60 | 40-140 | | | |
| Dicamba [2C] | 0.014 | 0.009 | mg/kg wet | 0.01880 | | 72 | 40-140 | | | |
| Dichlorprop | 0.130 | 0.047 | mg/kg wet | 0.1880 | | 69 | 40-140 | | | |
| Dichlorprop [2C] | 0.123 | 0.047 | mg/kg wet | 0.1880 | | 65 | 40-140 | | | |
| Dinoseb | 0.015 | 0.048 | mg/kg wet | 0.09500 | | 16 | 10-100 | | | |
| Dinoseb [2C] | 0.017 | 0.048 | mg/kg wet | 0.09500 | | 18 | 10-100 | | | |
| MCPA | 12.4 | 2.32 | mg/kg wet | 18.60 | | 67 | 40-140 | | | |
| MCPA [2C] | 13.7 | 2.32 | mg/kg wet | 18.60 | | 73 | 40-140 | | | |
| MCPP | 11.5 | 2.35 | mg/kg wet | 18.80 | | 61 | 40-140 | | | |
| MCPP [2C] | 12.7 | 2.35 | mg/kg wet | 18.80 | | 68 | 40-140 | | | |
| *Surrogate: DCAA* | *0.138* | | mg/kg wet | *0.2000* | | *69* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.143* | | mg/kg wet | *0.2000* | | *71* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 64 | 40-140 | 13 | 30 | |
| 2,4,5-T [2C] | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 70 | 40-140 | 12 | 30 | |
| 2,4,5-TP (Silvex) | 0.013 | 0.010 | mg/kg wet | 0.01900 | | 66 | 40-140 | 10 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.012 | 0.010 | mg/kg wet | 0.01900 | | 62 | 40-140 | 0 | 30 | |
| 2,4-D | 0.111 | 0.047 | mg/kg wet | 0.1880 | | 59 | 40-140 | 13 | 30 | |
| 2,4-D [2C] | 0.122 | 0.047 | mg/kg wet | 0.1880 | | 65 | 40-140 | 9 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71832 - 3546** | | | | | | | | | | |
| 2,4-DB | 0.108 | 0.048 | mg/kg wet | 0.1900 | | 57 | 40-140 | 4 | 30 | |
| 2,4-DB [2C] | 0.102 | 0.048 | mg/kg wet | 0.1900 | | 54 | 40-140 | 8 | 30 | |
| Dalapon | 0.244 | 0.046 | mg/kg wet | 0.4550 | | 54 | 40-140 | 15 | 30 | |
| Dalapon [2C] | 0.315 | 0.046 | mg/kg wet | 0.4550 | | 69 | 40-140 | 16 | 30 | |
| Dicamba | 0.013 | 0.009 | mg/kg wet | 0.01880 | | 70 | 40-140 | 15 | 30 | |
| Dicamba [2C] | 0.015 | 0.009 | mg/kg wet | 0.01880 | | 82 | 40-140 | 13 | 30 | |
| Dichlorprop | 0.149 | 0.047 | mg/kg wet | 0.1880 | | 79 | 40-140 | 13 | 30 | |
| Dichlorprop [2C] | 0.139 | 0.047 | mg/kg wet | 0.1880 | | 74 | 40-140 | 13 | 30 | |
| Dinoseb | 0.024 | 0.048 | mg/kg wet | 0.09500 | | 26 | 10-100 | 46 | 30 | |
| Dinoseb [2C] | 0.019 | 0.048 | mg/kg wet | 0.09500 | | 20 | 10-100 | 8 | 30 | |
| MCPA | 15.6 | 2.32 | mg/kg wet | 18.60 | | 84 | 40-140 | 22 | 30 | |
| MCPA [2C] | 13.6 | 2.32 | mg/kg wet | 18.60 | | 73 | 40-140 | 0.5 | 30 | |
| MCPP | 12.6 | 2.35 | mg/kg wet | 18.80 | | 67 | 40-140 | 8 | 30 | |
| MCPP [2C] | 13.5 | 2.35 | mg/kg wet | 18.80 | | 72 | 40-140 | 6 | 30 | |
| *Surrogate: DCAA* | *0.141* | | mg/kg wet | *0.2000* | | *71* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.144* | | mg/kg wet | *0.2000* | | *72* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.40* | | mg/kg wet | *3.333* | | *72* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.53* | | mg/kg wet | *5.000* | | *71* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.64* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.52* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.34* | | mg/kg wet | *5.000* | | *67* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.47* | | mg/kg wet | *3.333* | | *74* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.47* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.03* | | mg/kg wet | *3.333* | | *91* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.47 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| 1,3-Dichlorobenzene | 2.47 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 2.81 | 0.333 | mg/kg wet | 3.333 | | 84 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.85 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.76 | 1.67 | mg/kg wet | 3.333 | | 83 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| 2-Chloronaphthalene | 2.25 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| 2-Chlorophenol | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | | | |
| 2-Methylnaphthalene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| 2-Methylphenol | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2-Nitrophenol | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.47 | 0.667 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 3+4-Methylphenol | 5.12 | 0.667 | mg/kg wet | 6.667 | | 77 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 2.89 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| 4-Chloroaniline | 1.95 | 0.667 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| 4-Nitrophenol | 2.50 | 1.67 | mg/kg wet | 3.333 | | 75 | 30-130 | | | |
| Acenaphthene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| Acenaphthylene | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| Acetophenone | 2.35 | 0.667 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| Aniline | 1.50 | 1.67 | mg/kg wet | 3.333 | | 45 | 40-140 | | | |
| Anthracene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Azobenzene | 2.23 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| Benzo(a)anthracene | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Benzo(a)pyrene | 2.77 | 0.167 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.23 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 2.20 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.38 | 0.333 | mg/kg wet | 3.333 | | 101 | 40-140 | | | |
| Butylbenzylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Chrysene | 2.93 | 0.167 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.27 | 0.167 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Dibenzofuran | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Diethylphthalate | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Dimethylphthalate | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Di-n-butylphthalate | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Di-n-octylphthalate | 3.38 | 0.333 | mg/kg wet | 3.333 | | 102 | 40-140 | | | |
| Fluoranthene | 3.05 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Fluorene | 2.79 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Hexachlorobenzene | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| Hexachlorobutadiene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Hexachloroethane | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.27 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Isophorone | 2.18 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Naphthalene | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Nitrobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.85 | 0.333 | mg/kg wet | 3.333 | | 56 | 40-140 | | | |
| Pentachlorophenol | 3.02 | 1.67 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| Phenanthrene | 2.74 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Phenol | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 30-130 | | | |
| Pyrene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.49* | | mg/kg wet | *3.333* | | *75* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.96* | | mg/kg wet | *5.000* | | *99* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.86* | | mg/kg wet | *5.000* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.56* | | mg/kg wet | *3.333* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.47* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.60* | | mg/kg wet | *3.333* | | *78* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.65* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.12* | | mg/kg wet | *3.333* | | *94* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 2 | 30 | |
| 1,2-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| 1,3-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| 1,4-Dichlorobenzene | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 4 | 30 | |
| 2,4,5-Trichlorophenol | 2.90 | 0.333 | mg/kg wet | 3.333 | | 87 | 30-130 | 1 | 30 | |
| 2,4,6-Trichlorophenol | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | 2 | 30 | |
| 2,4-Dichlorophenol | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 30-130 | 6 | 30 | |
| 2,4-Dimethylphenol | 2.55 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | 0.4 | 30 | |
| 2,4-Dinitrophenol | 2.68 | 1.67 | mg/kg wet | 3.333 | | 80 | 30-130 | 3 | 30 | |
| 2,4-Dinitrotoluene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 6 | 30 | |
| 2,6-Dinitrotoluene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 3 | 30 | |
| 2-Chloronaphthalene | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 1 | 30 | |
| 2-Chlorophenol | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 30-130 | 3 | 30 | |
| 2-Methylnaphthalene | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | 5 | 30 | |
| 2-Methylphenol | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 30-130 | 1 | 30 | |
| 2-Nitrophenol | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | 3 | 30 | |
| 3,3´-Dichlorobenzidine | 2.44 | 0.667 | mg/kg wet | 3.333 | | 73 | 40-140 | 0.9 | 30 | |
| 3+4-Methylphenol | 4.82 | 0.667 | mg/kg wet | 6.667 | | 72 | 30-130 | 6 | 30 | |
| 4-Bromophenyl-phenylether | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 0.6 | 30 | |
| 4-Chloroaniline | 1.84 | 0.667 | mg/kg wet | 3.333 | | 55 | 40-140 | 6 | 30 | |
| 4-Nitrophenol | 2.39 | 1.67 | mg/kg wet | 3.333 | | 72 | 30-130 | 5 | 30 | |
| Acenaphthene | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 4 | 30 | |
| Acenaphthylene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 5 | 30 | |
| Acetophenone | 2.24 | 0.667 | mg/kg wet | 3.333 | | 67 | 40-140 | 5 | 30 | |
| Aniline | 1.41 | 1.67 | mg/kg wet | 3.333 | | 42 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71211 - 3546** | | | | | | | | | | |
| Anthracene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 2 | 30 | |
| Azobenzene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 1 | 30 | |
| Benzo(a)anthracene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 1 | 30 | |
| Benzo(a)pyrene | 2.75 | 0.167 | mg/kg wet | 3.333 | | 82 | 40-140 | 0.6 | 30 | |
| Benzo(b)fluoranthene | 2.58 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 0.6 | 30 | |
| Benzo(g,h,i)perylene | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 0.3 | 30 | |
| Benzo(k)fluoranthene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 0.7 | 30 | |
| bis(2-Chloroethoxy)methane | 2.30 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 4 | 30 | |
| bis(2-Chloroethyl)ether | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 3 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 2 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.29 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 3 | 30 | |
| Butylbenzylphthalate | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | 7 | 30 | |
| Chrysene | 2.88 | 0.167 | mg/kg wet | 3.333 | | 87 | 40-140 | 2 | 30 | |
| Dibenzo(a,h)Anthracene | 3.23 | 0.167 | mg/kg wet | 3.333 | | 97 | 40-140 | 1 | 30 | |
| Dibenzofuran | 2.44 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 4 | 30 | |
| Diethylphthalate | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 5 | 30 | |
| Dimethylphthalate | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 4 | 30 | |
| Di-n-butylphthalate | 3.06 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 3 | 30 | |
| Di-n-octylphthalate | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 6 | 30 | |
| Fluoranthene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 3 | 30 | |
| Fluorene | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 3 | 30 | |
| Hexachlorobenzene | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 1 | 30 | |
| Hexachlorobutadiene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 2 | 30 | |
| Hexachloroethane | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 3 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.22 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 1 | 30 | |
| Isophorone | 2.13 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 2 | 30 | |
| Naphthalene | 2.44 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 4 | 30 | |
| Nitrobenzene | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 0.4 | 30 | |
| N-Nitrosodimethylamine | 1.74 | 0.333 | mg/kg wet | 3.333 | | 52 | 40-140 | 6 | 30 | |
| Pentachlorophenol | 3.11 | 1.67 | mg/kg wet | 3.333 | | 93 | 30-130 | 3 | 30 | |
| Phenanthrene | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 2 | 30 | |
| Phenol | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 30-130 | 5 | 30 | |
| Pyrene | 2.74 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 6 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.32* | | mg/kg wet | *3.333* | | *70* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.81* | | mg/kg wet | *5.000* | | *96* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.64* | | mg/kg wet | *5.000* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.57* | | mg/kg wet | *3.333* | | *77* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.25* | | mg/kg wet | *5.000* | | *65* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.49* | | mg/kg wet | *3.333* | | *75* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.38* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.96* | | mg/kg wet | *3.333* | | *89* | *30-130* | | | |
| **Batch CL71216 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71216 - 3546** | | | | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71216 - 3546** | | | | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyridine | ND | 1.67 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.44* | | mg/kg wet | *3.333* | | *73* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.54* | | mg/kg wet | *5.000* | | *71* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.73* | | mg/kg wet | *5.000* | | *75* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.62* | | mg/kg wet | *3.333* | | *78* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.41* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.50* | | mg/kg wet | *3.333* | | *75* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.58* | | mg/kg wet | *5.000* | | *72* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.07* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.45 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 2.72 | 0.333 | mg/kg wet | 3.333 | | 81 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 30-130 | | | |
| 2,4-Dinitrophenol | 2.88 | 1.67 | mg/kg wet | 3.333 | | 86 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.96 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.62 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| 2-Chloronaphthalene | 2.12 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| 2-Chlorophenol | 2.15 | 0.333 | mg/kg wet | 3.333 | | 65 | 30-130 | | | |
| 2-Methylnaphthalene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| 2-Methylphenol | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 30-130 | | | |
| 2-Nitrophenol | 2.45 | 0.333 | mg/kg wet | 3.333 | | 73 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.42 | 0.667 | mg/kg wet | 3.333 | | 73 | 40-140 | | | |
| 3+4-Methylphenol | 4.62 | 0.667 | mg/kg wet | 6.667 | | 69 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| 4-Chloroaniline | 1.81 | 0.667 | mg/kg wet | 3.333 | | 54 | 40-140 | | | |
| 4-Nitrophenol | 2.56 | 1.67 | mg/kg wet | 3.333 | | 77 | 30-130 | | | |
| Acenaphthene | 2.32 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| Acenaphthylene | 2.25 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | | | |
| Acetophenone | 2.10 | 0.667 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71216 - 3546** | | | | | | | | | | |
| Aniline | 1.38 | 1.67 | mg/kg wet | 3.333 | | 42 | 40-140 | | | |
| Anthracene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| Azobenzene | 2.02 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | | | |
| Benzo(a)anthracene | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| Benzo(a)pyrene | 2.65 | 0.167 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.49 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.15 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Benzo(k)fluoranthene | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.12 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 1.97 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.05 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Butylbenzylphthalate | 2.97 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Chrysene | 2.83 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.13 | 0.167 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| Dibenzofuran | 2.49 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | | | |
| Diethylphthalate | 2.88 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Dimethylphthalate | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Di-n-butylphthalate | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Di-n-octylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Fluoranthene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Fluorene | 2.69 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | | | |
| Hexachlorobenzene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Hexachlorobutadiene | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| Hexachloroethane | 2.15 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Isophorone | 1.93 | 0.333 | mg/kg wet | 3.333 | | 58 | 40-140 | | | |
| Naphthalene | 2.26 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | | | |
| Nitrobenzene | 2.12 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.67 | 0.333 | mg/kg wet | 3.333 | | 50 | 40-140 | | | |
| Pentachlorophenol | 3.06 | 1.67 | mg/kg wet | 3.333 | | 92 | 30-130 | | | |
| Phenanthrene | 2.62 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Phenol | 2.08 | 0.333 | mg/kg wet | 3.333 | | 62 | 30-130 | | | |
| Pyrene | 2.77 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Pyridine | 1.44 | 1.67 | mg/kg wet | 3.333 | | 43 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.23* | | mg/kg wet | *3.333* | | *67* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.79* | | mg/kg wet | *5.000* | | *96* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.56* | | mg/kg wet | *5.000* | | *71* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.44* | | mg/kg wet | *3.333* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.19* | | mg/kg wet | *5.000* | | *64* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.38* | | mg/kg wet | *3.333* | | *71* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.37* | | mg/kg wet | *5.000* | | *67* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.12* | | mg/kg wet | *3.333* | | *94* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 5 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71216 - 3546** | | | | | | | | | | |
| 1,2-Dichlorobenzene | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 7 | 30 | |
| 1,3-Dichlorobenzene | 2.08 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 6 | 30 | |
| 1,4-Dichlorobenzene | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 7 | 30 | |
| 2,4,5-Trichlorophenol | 2.77 | 0.333 | mg/kg wet | 3.333 | | 83 | 30-130 | 2 | 30 | |
| 2,4,6-Trichlorophenol | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | 2 | 30 | |
| 2,4-Dichlorophenol | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 30-130 | 10 | 30 | |
| 2,4-Dimethylphenol | 2.09 | 0.333 | mg/kg wet | 3.333 | | 63 | 30-130 | 9 | 30 | |
| 2,4-Dinitrophenol | 2.98 | 1.67 | mg/kg wet | 3.333 | | 89 | 30-130 | 3 | 30 | |
| 2,4-Dinitrotoluene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 4 | 30 | |
| 2,6-Dinitrotoluene | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 2 | 30 | |
| 2-Chloronaphthalene | 2.05 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 3 | 30 | |
| 2-Chlorophenol | 1.97 | 0.333 | mg/kg wet | 3.333 | | 59 | 30-130 | 9 | 30 | |
| 2-Methylnaphthalene | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | 9 | 30 | |
| 2-Methylphenol | 2.20 | 0.333 | mg/kg wet | 3.333 | | 66 | 30-130 | 14 | 30 | |
| 2-Nitrophenol | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 30-130 | 7 | 30 | |
| 3,3´-Dichlorobenzidine | 2.57 | 0.667 | mg/kg wet | 3.333 | | 77 | 40-140 | 6 | 30 | |
| 3+4-Methylphenol | 3.96 | 0.667 | mg/kg wet | 6.667 | | 59 | 30-130 | 15 | 30 | |
| 4-Bromophenyl-phenylether | 2.75 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 2 | 30 | |
| 4-Chloroaniline | 1.72 | 0.667 | mg/kg wet | 3.333 | | 52 | 40-140 | 5 | 30 | |
| 4-Nitrophenol | 2.47 | 1.67 | mg/kg wet | 3.333 | | 74 | 30-130 | 4 | 30 | |
| Acenaphthene | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 2 | 30 | |
| Acenaphthylene | 2.19 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 3 | 30 | |
| Acetophenone | 1.89 | 0.667 | mg/kg wet | 3.333 | | 57 | 40-140 | 11 | 30 | |
| Aniline | 1.38 | 1.67 | mg/kg wet | 3.333 | | 41 | 40-140 | 0.1 | 30 | |
| Anthracene | 2.74 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 0.9 | 30 | |
| Azobenzene | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 3 | 30 | |
| Benzo(a)anthracene | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 1 | 30 | |
| Benzo(a)pyrene | 2.67 | 0.167 | mg/kg wet | 3.333 | | 80 | 40-140 | 0.6 | 30 | |
| Benzo(b)fluoranthene | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 2 | 30 | |
| Benzo(g,h,i)perylene | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 0.6 | 30 | |
| Benzo(k)fluoranthene | 2.74 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 2 | 30 | |
| bis(2-Chloroethoxy)methane | 1.97 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 7 | 30 | |
| bis(2-Chloroethyl)ether | 1.83 | 0.333 | mg/kg wet | 3.333 | | 55 | 40-140 | 8 | 30 | |
| bis(2-chloroisopropyl)Ether | 1.88 | 0.333 | mg/kg wet | 3.333 | | 56 | 40-140 | 9 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 3 | 30 | |
| Butylbenzylphthalate | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 4 | 30 | |
| Chrysene | 2.80 | 0.167 | mg/kg wet | 3.333 | | 84 | 40-140 | 1 | 30 | |
| Dibenzo(a,h)Anthracene | 3.11 | 0.167 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.4 | 30 | |
| Dibenzofuran | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 4 | 30 | |
| Diethylphthalate | 2.77 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 4 | 30 | |
| Dimethylphthalate | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 2 | 30 | |
| Di-n-butylphthalate | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 0.3 | 30 | |
| Di-n-octylphthalate | 3.12 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 2 | 30 | |
| Fluoranthene | 3.05 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | 2 | 30 | |
| Fluorene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 2 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71216 - 3546** | | | | | | | | | | |
| Hexachlorobenzene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 1 | 30 | |
| Hexachlorobutadiene | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 4 | 30 | |
| Hexachloroethane | 2.02 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | 6 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.6 | 30 | |
| Isophorone | 1.83 | 0.333 | mg/kg wet | 3.333 | | 55 | 40-140 | 5 | 30 | |
| Naphthalene | 2.15 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 5 | 30 | |
| Nitrobenzene | 2.05 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 3 | 30 | |
| N-Nitrosodimethylamine | 1.45 | 0.333 | mg/kg wet | 3.333 | | 44 | 40-140 | 14 | 30 | |
| Pentachlorophenol | 2.99 | 1.67 | mg/kg wet | 3.333 | | 90 | 30-130 | 2 | 30 | |
| Phenanthrene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | 0.5 | 30 | |
| Phenol | 1.87 | 0.333 | mg/kg wet | 3.333 | | 56 | 30-130 | 11 | 30 | |
| Pyrene | 2.61 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 6 | 30 | |
| Pyridine | 1.35 | 1.67 | mg/kg wet | 3.333 | | 41 | 40-140 | 6 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.03* | | mg/kg wet | *3.333* | | *61* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.70* | | mg/kg wet | *5.000* | | *94* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.13* | | mg/kg wet | *5.000* | | *63* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.30* | | mg/kg wet | *3.333* | | *69* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.87* | | mg/kg wet | *5.000* | | *57* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.23* | | mg/kg wet | *3.333* | | *67* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *2.90* | | mg/kg wet | *5.000* | | *58* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.82* | | mg/kg wet | *3.333* | | *85* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL71545 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 100 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 9930 | 100 | mg/kg | 10000 | | 99 | 80-120 | | | |
| Total Organic Carbon (2) | 9140 | 100 | mg/kg | 10000 | | 91 | 80-120 | | | |
| Total Organic Carbon (Average) | 9530 | 100 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 10200 | 100 | mg/kg | 10000 | | 102 | 80-120 | 3 | 200 | |
| Total Organic Carbon (2) | 9790 | 100 | mg/kg | 10000 | | 98 | 80-120 | 7 | 200 | |
| Total Organic Carbon (Average) | 10000 | 100 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.40 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712199

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| Z-08 | See Attached |
| XH | Peaks found in the retention time window for MCPA, MCPP did not confirm by GC/MS. |
| U | Analyte included in the analysis, but not detected |
| RRF | Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration |
| Q | Calibration required quadratic regression (Q). |
| D | Diluted. |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712199

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

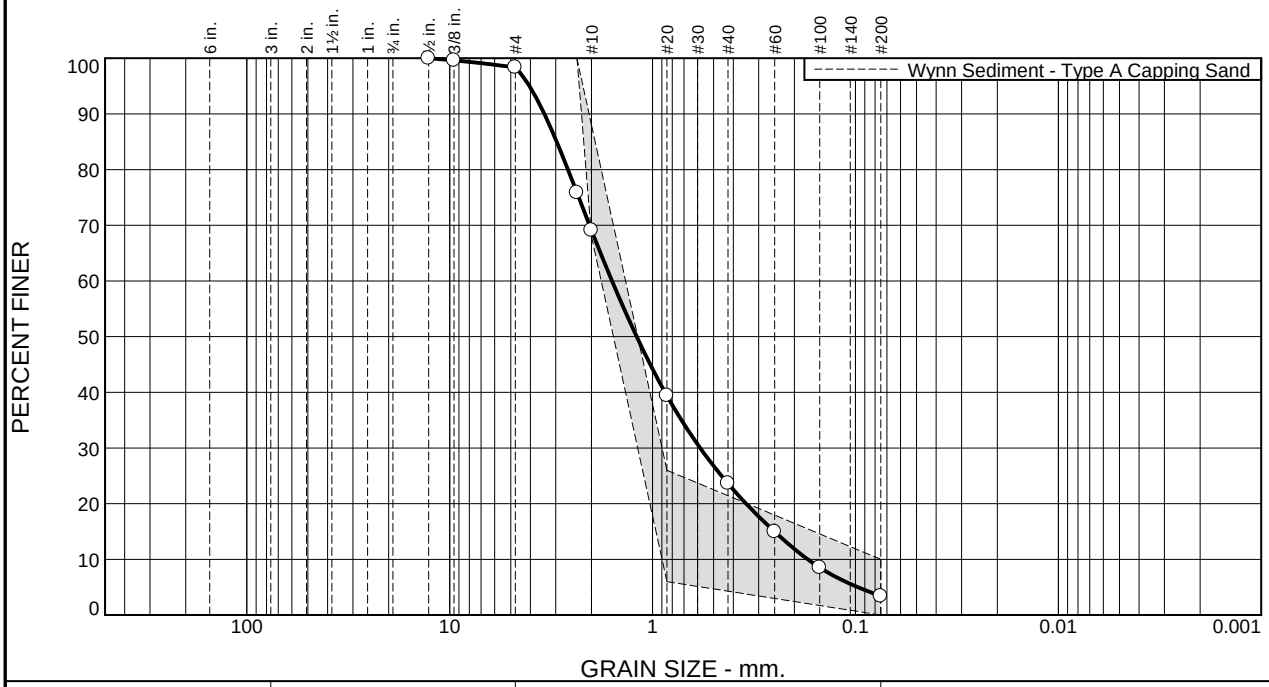
| THIELSCH ENGINEERING | 195 Frances Avenue<br>Cranston RI, 02910<br>Phone: (401)-467-6454<br>Fax: (401)-467-2398<br>http://www.thielsch.com | Client Information:<br>Charter Contracting<br>Boston, MA<br>PM: Marc Levesque<br>Assigned By:<br>Marc Levesque | Laboratory Information<br>Project Name:<br>**Wynn Boston Harbor Sediment Remediation**<br>**Boston, MA**<br>ESS Project Number: 1712199<br>Report Date: 12.12.17 |
|---|---|---|---|

# LABORATORY TESTING DATA SHEET

| Boring ID | ESS Sample No. | Depth (ft) | CTS Laboratory No. | Identification Tests | | | | | | | Density | | Strength Tests | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water Content % | LL % | PL % | Gravel % | Sand % | Fines % | Org. % | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) Corrected | CBR Setup as % of Proctor | CBR Dry unit wt. pcf | CBR Water Content % | CBR @ 0.1" @ 0.2" | Laboratory Log and Soil Description |
| Type A - Capping Sand - 020 | 1712199-01 | Stock | 17-S-1928 | 3.8 | | | 1.7 | 94.9 | 3.4 | | | | | | | | Greyish Brown well graded sand (SW) |
| Type A - Capping Sand - 021 | 1712199-02 | Stock | 17-S-1929 | 3.6 | | | 1.8 | 94.9 | 3.3 | | | | | | | | Greyish Brown well graded sand (SW) |
| Type A - Capping Sand - 022 | 1712199-03 | Stock | 17-S-1930 | 3.8 | | | 2.1 | 94.5 | 3.4 | | | | | | | | Greyish Brown well graded sand (SW) |
| Type A - Capping Sand - 023 | 1712199-04 | Stock | 17-S-1931 | 3.9 | | | 1.7 | 94.3 | 4.0 | | | | | | | | Greyish Brown well graded sand (SW) |
| Type A - Capping Sand - 024 | 1712199-05 | Stock | 17-S-1932 | 3.8 | | | 1.9 | 94.6 | 3.5 | | | | | | | | Greyish Brown well graded sand (SW) |
| Type C - Capping Sand - 014 | 1712199-06 | Stock | 17-S-1933 | 13.1 | | | 1.5 | 38.6 | 59.9 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 015 | 1712199-07 | Stock | 17-S-1934 | 10.9 | | | 1.5 | 45.1 | 53.4 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 016 | 1712199-08 | Stock | 17-S-1935 | 11.6 | | | 1.5 | 42.9 | 55.6 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 017 | 1712199-09 | Stock | 17-S-1936 | 10.5 | | | 1.7 | 44.0 | 54.3 | | | | | | | | Gray sandy silt (ML) |
| Type C - Capping Sand - 018 | 1712199-10 | Stock | 17-S-1937 | 11.6 | | | 1.8 | 43.2 | 55.0 | | | | | | | | Gray sandy silt (ML) |
| | | | | | | | | | | | | | | | | | |

Reviewed By _____ Date Revised: *12.13.17*

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.7 | 29.2 | 45.5 | 20.2 | 3.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.6 | | |
| #4 | 98.3 | | |
| #8 | 75.9 | 100.0 | X |
| #10 | 69.1 | 68.0 - 88.0 | |
| #20 | 39.4 | 6.0 - 26.0 | X |
| #40 | 23.6 | | |
| #60 | 14.9 | | |
| #100 | 8.5 | | |
| #200 | 3.4 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4137 $D_{85}$= 2.9681 $D_{60}$= 1.5846
$D_{50}$= 1.1975 $D_{30}$= 0.5827 $D_{15}$= 0.2509
$D_{10}$= 0.1720 $C_u$= 9.21 $C_c$= 1.25

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

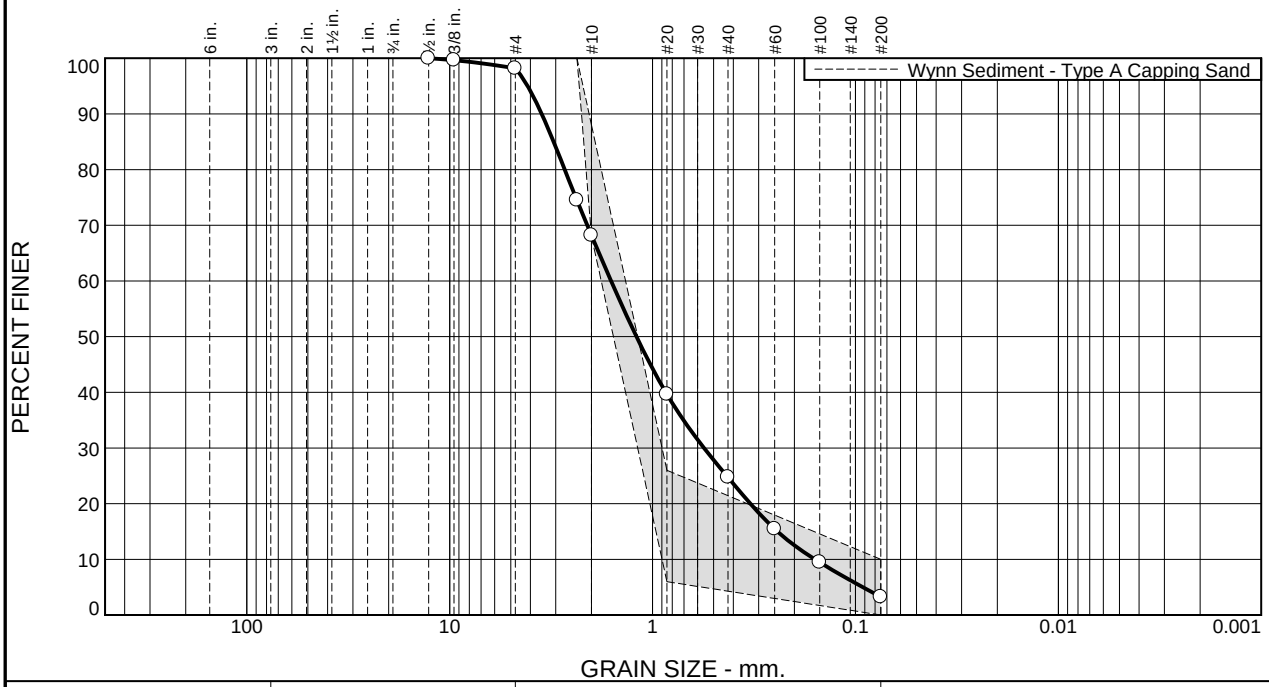
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 020

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.8 | 30.0 | 43.5 | 21.4 | 3.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.6 | | |
| #4 | 98.2 | | |
| #8 | 74.5 | 100.0 | X |
| #10 | 68.2 | 68.0 - 88.0 | |
| #20 | 39.7 | 6.0 - 26.0 | X |
| #40 | 24.7 | | |
| #60 | 15.4 | | |
| #100 | 9.5 | | |
| #200 | 3.3 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5173 $D_{85}$= 3.0738 $D_{60}$= 1.6013
$D_{50}$= 1.2002 $D_{30}$= 0.5578 $D_{15}$= 0.2424
$D_{10}$= 0.1584 $C_u$= 10.11 $C_c$= 1.23

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

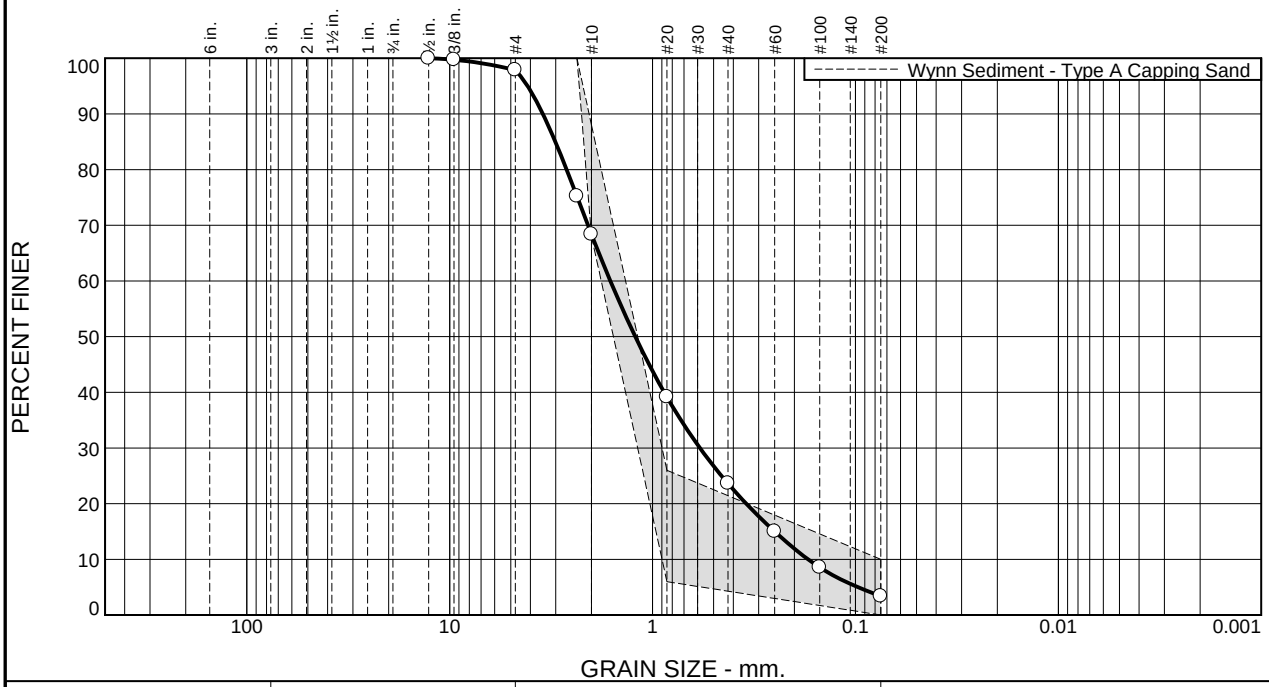
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 021

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.1 | 29.5 | 44.8 | 20.2 | 3.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.7 | | |
| #4 | 97.9 | | |
| #8 | 75.2 | 100.0 | X |
| #10 | 68.4 | 68.0 - 88.0 | |
| #20 | 39.2 | 6.0 - 26.0 | X |
| #40 | 23.6 | | |
| #60 | 15.0 | | |
| #100 | 8.5 | | |
| #200 | 3.4 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4728 $D_{85}$= 3.0145 $D_{60}$= 1.6144
$D_{50}$= 1.2164 $D_{30}$= 0.5843 $D_{15}$= 0.2501
$D_{10}$= 0.1714 $C_u$= 9.42 $C_c$= 1.23

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

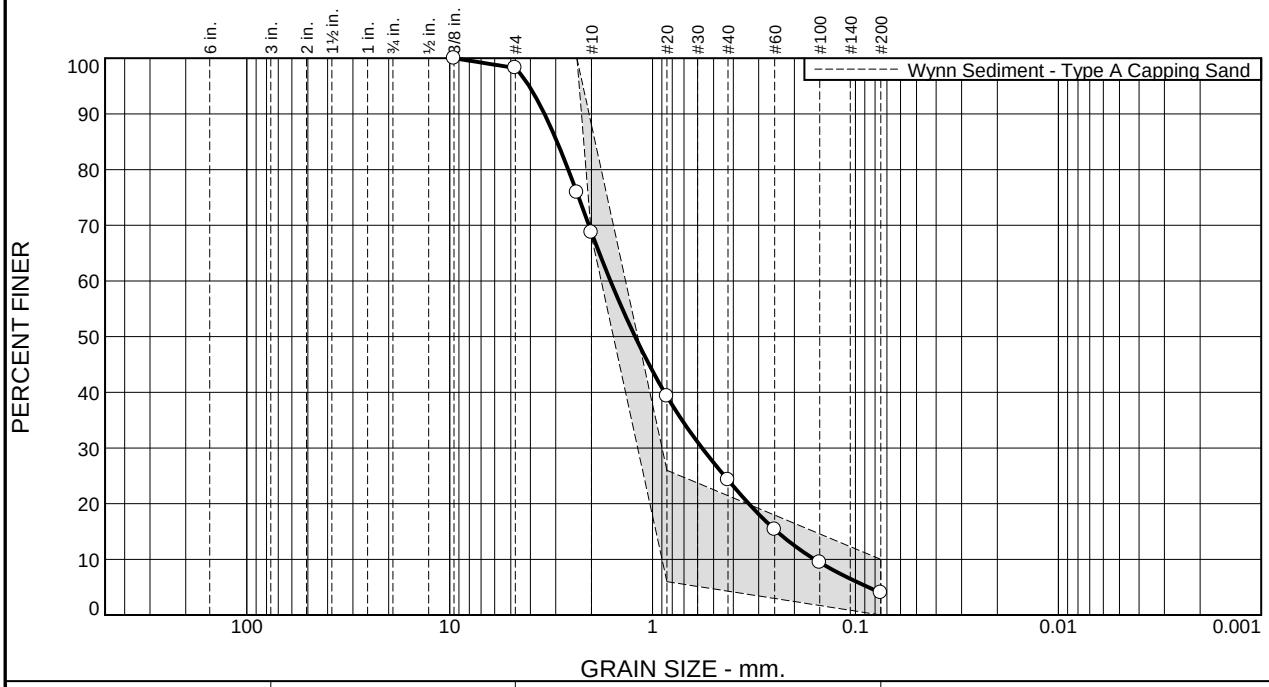
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 022

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.7 | 29.6 | 44.4 | 20.3 | 4.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.3 | | |
| #8 | 75.9 | 100.0 | X |
| #10 | 68.7 | 68.0 - 88.0 | |
| #20 | 39.3 | 6.0 - 26.0 | X |
| #40 | 24.3 | | |
| #60 | 15.3 | | |
| #100 | 9.4 | | |
| #200 | 4.0 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4097 $D_{85}$= 2.9567 $D_{60}$= 1.6126
$D_{50}$= 1.2191 $D_{30}$= 0.5703 $D_{15}$= 0.2439
$D_{10}$= 0.1590 $C_u$= 10.14 $C_c$= 1.27

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

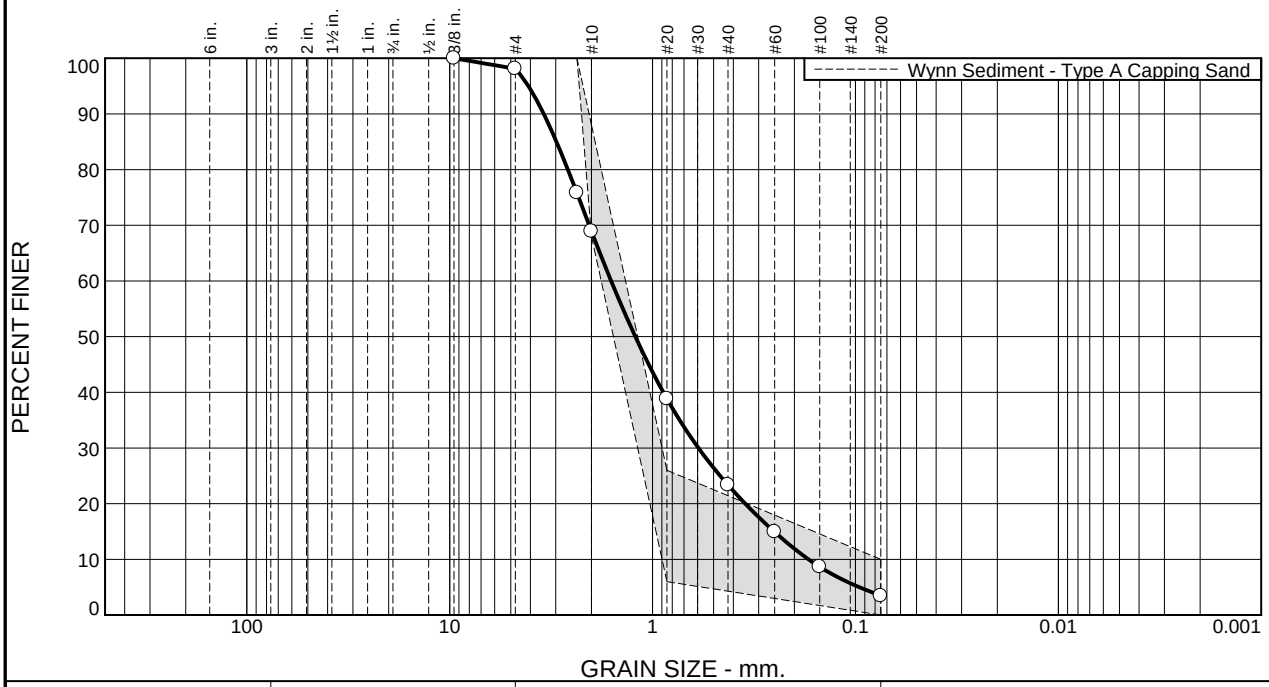
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 023

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.9 | 29.2 | 45.5 | 19.9 | 3.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.1 | | |
| #8 | 75.8 | 100.0 | X |
| #10 | 68.9 | 68.0 - 88.0 | |
| #20 | 38.8 | 6.0 - 26.0 | X |
| #40 | 23.4 | | |
| #60 | 14.9 | | |
| #100 | 8.6 | | |
| #200 | 3.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4370 $D_{85}$= 2.9767 $D_{60}$= 1.6002
$D_{50}$= 1.2160 $D_{30}$= 0.5943 $D_{15}$= 0.2516
$D_{10}$= 0.1706 $C_u$= 9.38 $C_c$= 1.29

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

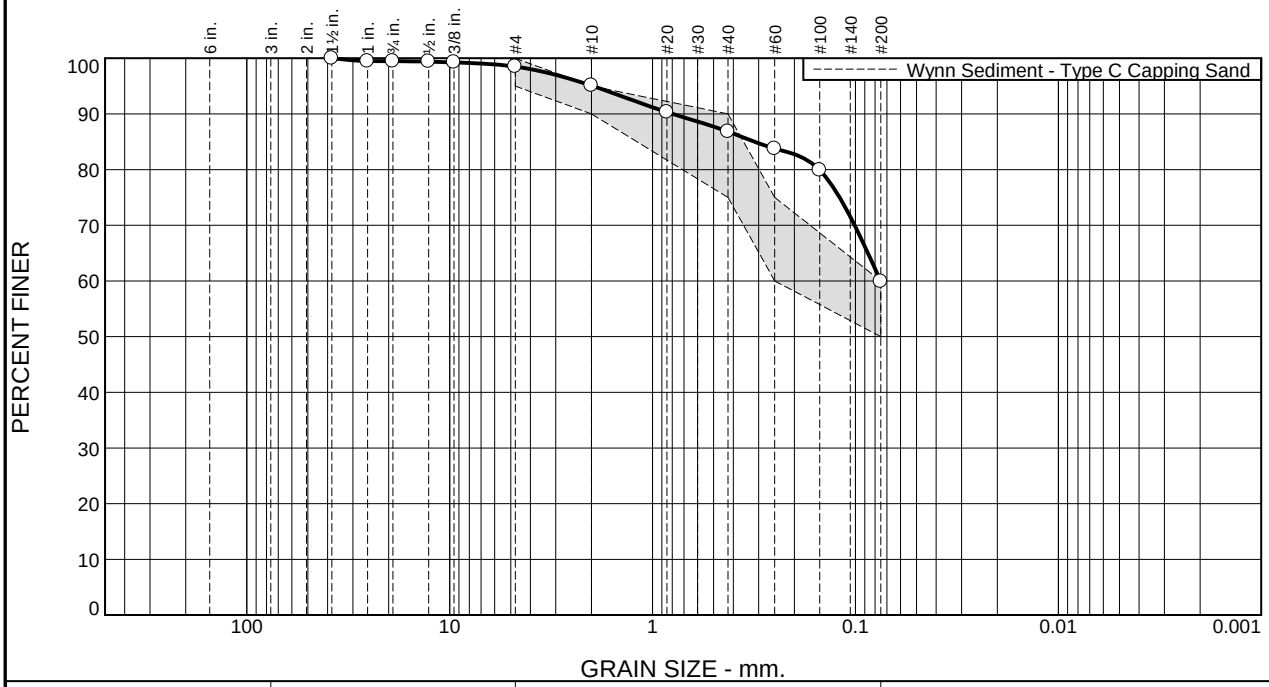
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 024

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.5 | 1.0 | 3.4 | 8.3 | 26.9 | 59.9 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.5 | | |
| 0.75" | 99.5 | | |
| 0.5" | 99.4 | | |
| 0.375" | 99.2 | | |
| #4 | 98.5 | 95.0 - 100.0 | |
| #10 | 95.1 | 90.0 - 95.0 | X |
| #20 | 90.3 | | |
| #40 | 86.8 | 75.0 - 90.0 | |
| #60 | 83.8 | 60.0 - 75.0 | X |
| #100 | 79.9 | | |
| #200 | 59.9 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 0.7969 $D_{85}$= 0.3145 $D_{60}$= 0.0752
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

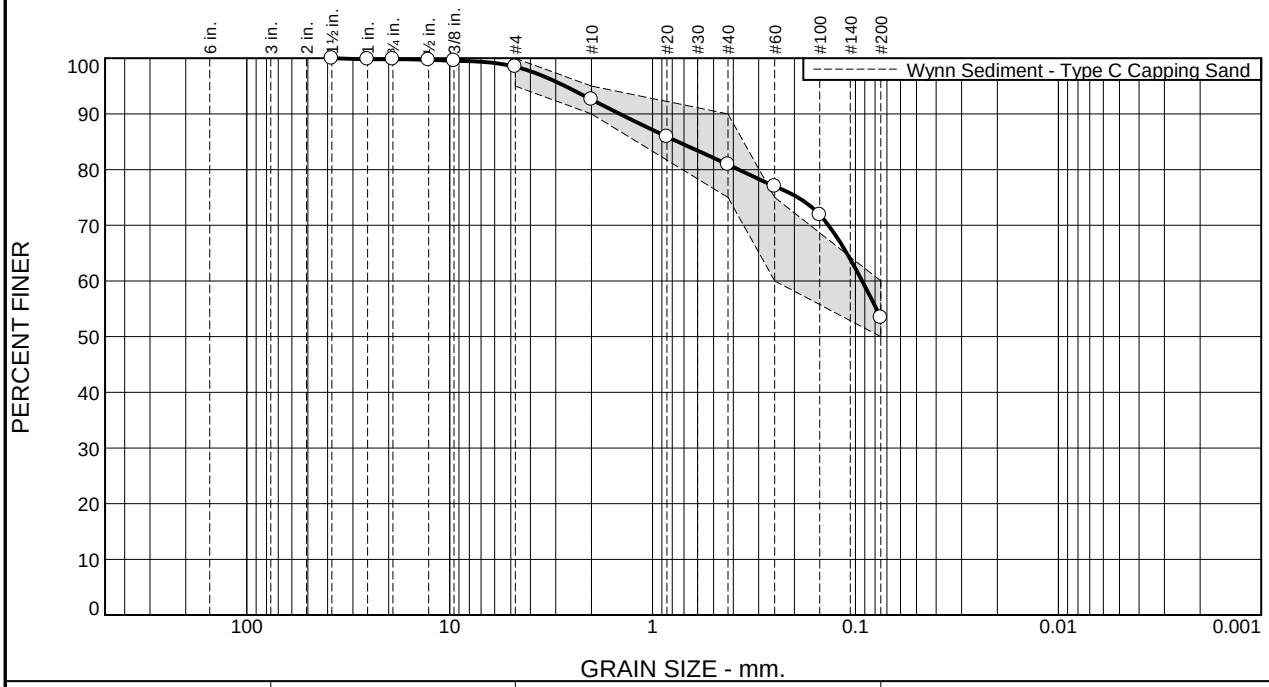
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 014

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.2 | 1.3 | 5.9 | 11.7 | 27.5 | 53.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.8 | | |
| 0.75" | 99.8 | | |
| 0.5" | 99.7 | | |
| 0.375" | 99.6 | | |
| #4 | 98.5 | 95.0 - 100.0 | |
| #10 | 92.6 | 90.0 - 95.0 | |
| #20 | 85.9 | | |
| #40 | 80.9 | 75.0 - 90.0 | |
| #60 | 77.0 | 60.0 - 75.0 | X |
| #100 | 71.9 | | |
| #200 | 53.4 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4493 $D_{85}$= 0.7498 $D_{60}$= 0.0927
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

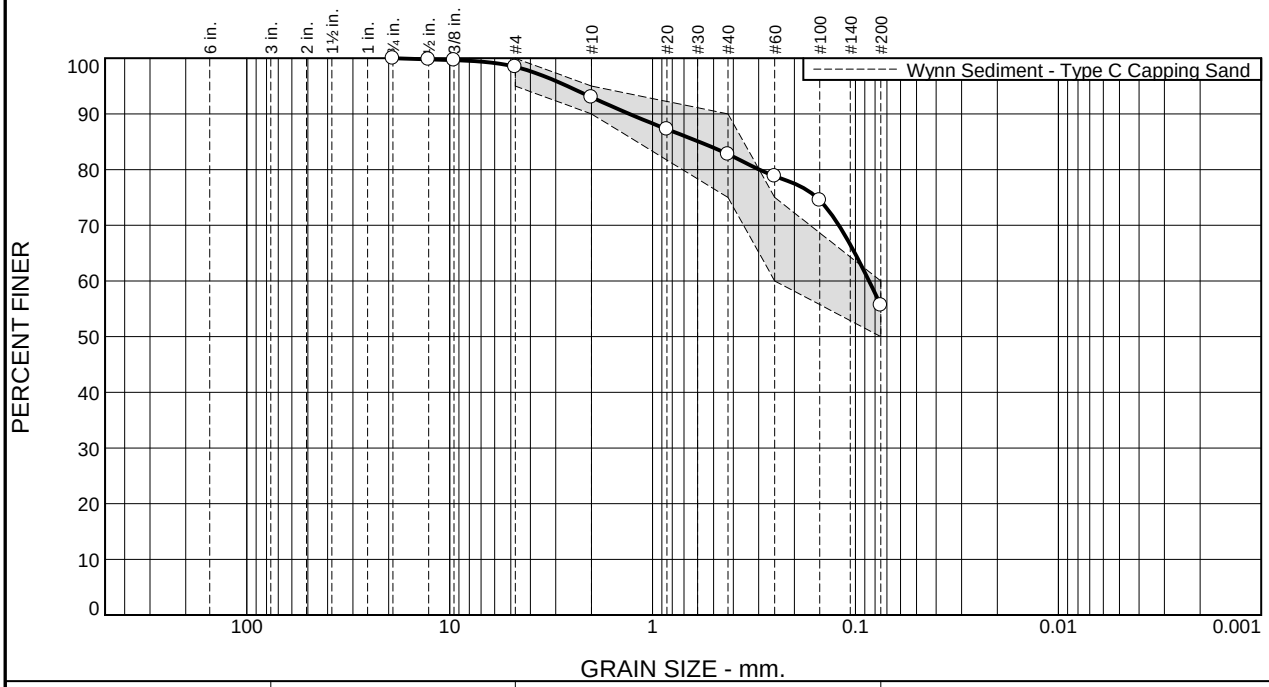
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 015

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.5 | 5.5 | 10.2 | 27.2 | 55.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.8 | | |
| 0.375" | 99.6 | | |
| #4 | 98.5 | 95.0 - 100.0 | |
| #10 | 93.0 | 90.0 - 95.0 | |
| #20 | 87.3 | | |
| #40 | 82.8 | 75.0 - 90.0 | |
| #60 | 78.8 | 60.0 - 75.0 | X |
| #100 | 74.5 | | |
| #200 | 55.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3013 $D_{85}$= 0.5896 $D_{60}$= 0.0857
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

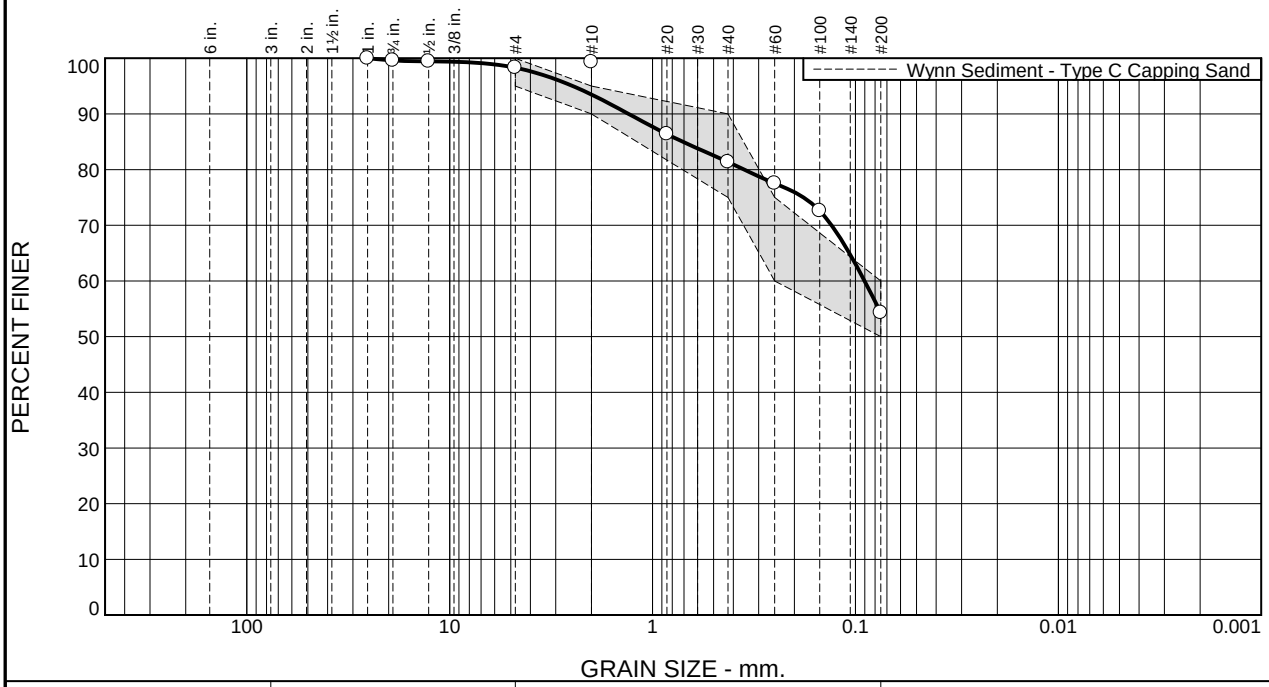
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 016

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.4 | 1.3 | 4.8 | 12.1 | 27.1 | 54.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | | |
| 0.75" | 99.6 | | |
| 0.5" | 99.4 | | |
| #4 | 98.3 | 95.0 - 100.0 | |
| #10 | 93.5 | 90.0 - 95.0 | |
| #20 | 86.4 | | |
| #40 | 81.4 | 75.0 - 90.0 | |
| #60 | 77.5 | 60.0 - 75.0 | X |
| #100 | 72.6 | | |
| #200 | 54.3 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey silty sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3125 $D_{85}$= 0.7094 $D_{60}$= 0.0902
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

Sample contained one (1) large coarse gravel aggregate.

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

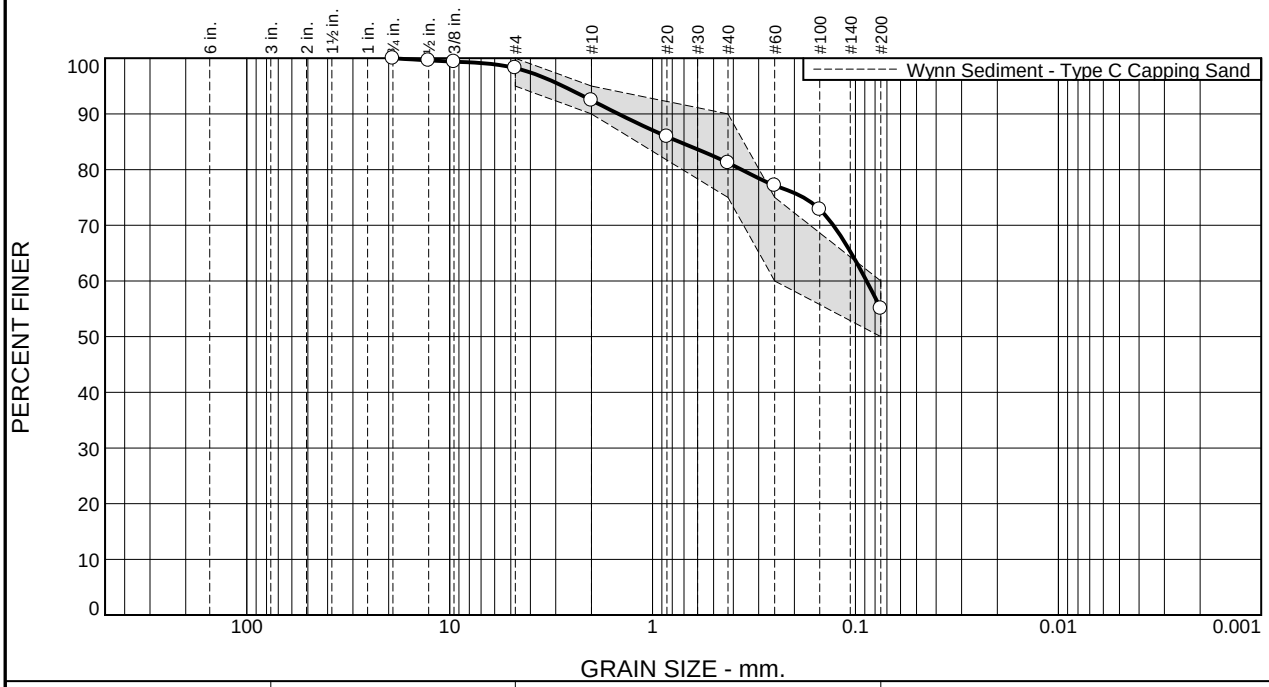
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 017

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.8 | 5.8 | 11.2 | 26.2 | 55.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.6 | | |
| 0.375" | 99.4 | | |
| #4 | 98.2 | 95.0 - 100.0 | |
| #10 | 92.4 | 90.0 - 95.0 | |
| #20 | 85.9 | | |
| #40 | 81.2 | 75.0 - 90.0 | |
| #60 | 77.2 | 60.0 - 75.0 | X |
| #100 | 72.8 | | |
| #200 | 55.0 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4730 $D_{85}$= 0.7397 $D_{60}$= 0.0882
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 018

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-10

# SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
**ESS Project No. 1712199**
Project Manager Marc Levesque
Date Received 12/8/2017 (by )

Client Company Charter
Client Email
Site Location
Date Assigned 12/7/2017

Collected By
Date Required 12/13/2017

| Sample Information | | | | Lab No. | Identification Tests | | | | | | | | Permeability | | Compaction | | | Soil Strength | | | Consol. | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring/ Test Pit No. | Sample or depth | Sample date | ESS Sample ID | | Water Cont. % | LL & PL % | Org. % | Bulk | Sieve -200 % | Hyd -2μ % | $G_s$ | Tube Den-sity | Sand | Clay | Mod. | Std. | CBR | Un-con-fined | UU | CIU | Stand ard | E.O.P. | |
| | | | | | D2216 | D4318 | D2974 | | D422 | | D854 | | D2434 | D5084 | D1557 | D698 | D1883 | D2166 | D2850 | D4767 | D2435 | D2435 | # |
| Type A - Capping Sand - 020 | | 12/7/17 | 1712199-01 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 021 | | 12/7/17 | 1712199-02 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 022 | | 12/7/17 | 1712199-03 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 023 | | 12/7/17 | 1712199-04 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 024 | | 12/7/17 | 1712199-05 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 014 | | 12/7/17 | 1712199-06 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 015 | | 12/7/17 | 1712199-07 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 016 | | 12/7/17 | 1712199-08 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 017 | | 12/7/17 | 1712199-09 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 018 | | 12/7/17 | 1712199-10 | | X | | | | X | | | | | | | | | | | | | | ** |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |

Notes: ** = D2487 Material Classification

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

## Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

# REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

**Report Prepared Date:**

December 20, 2017

## Report Information:

**Pace Project #: 10414060**
**Sample Receipt Date: 12/12/2017**
**Client Project #: 1712199**
**Client Sub PO #: B02407**
**State Cert #: N/A**

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Joanne Richardson

December 20, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

## Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## DISCUSSION

This report presents the results from the analyses performed on ten samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 34-89%. Except for seven low values, which were flagged "R" on the results tables, the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batch using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 84-105% with relative percent differences of 0.7-15.0%. These results were within the target ranges for the method.



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Minnesota Laboratory Certifications

| Authority | Certificate # | Authority | Certificate # |
|---|---|---|---|
| A2LA | 2926.01 | Mississippi | MN00064 |
| Alabama | 40770 | Montana | CERT0092 |
| Alaska | MN00064 | Nebraska | NE-OS-18-06 |
| Alaska | UST-078 | Nevada | MN00064 |
| Arizona | AZ0014 | New Jersey (NE | MN002 |
| Arkansas | 88-0680 | New York (NEL | 11647 |
| CNMI Saipan | MP0003 | New hampshire | 2081 |
| California | MN00064 | North Carolina | 27700 |
| Colorado | MN00064 | North Carolina | 530 |
| Connecticut | PH-0256 | North Dakota | R-036 |
| EPA Region 8 | 8TMS-L | Ohio | 41244 |
| Florida (NELAP | E87605 | Ohio VAP | CL101 |
| Georgia (EDP) | 959 | Oklahoma | 9507 |
| Guam EPA | 959 | Oregon (ELAP) | MN200001 |
| Hawaii | MN00064 | Oregon (OREL | MN300001 |
| Idaho | MN00064 | Pennsylvania | 68-00563 |
| Illinois | 200011 | Puerto Rico | MN00064 |
| Indiana | C-MN-01 | South Carolina | 74003001 |
| Iowa | 368 | Tennessee | TN02818 |
| Kansas | E-10167 | Texas | T104704192 |
| Kentucky | 90062 | Utah (NELAP) | MN00064 |
| Louisiana | 03086 | Virginia | 460163 |
| Louisiana | MN00064 | Washington | C486 |
| Maine | MN00064 | West Virginia # | 9952C |
| Maryland | 322 | West Virginia D | 382 |
| Michigan | 9909 | Wisconsin | 999407970 |
| Minnesota | 027-053-137 | Wyoming | 8TMS-L |

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix A

Sample Management

10414060

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1712199

Turn Time ___ Standard Other **DUE 12/20/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables ***Excel** Access ***PDF**

| | | | |
|---|---|---|---|
| Co. Name: **ESS Laboratory** | Project #: | Project Name: **1712199** | |
| Contact Person: **Shawn Morrell** | Proj. Location: | | |
| Address: **ext 3083** | City , State: | Zip: | PO #: B02407 |
| Tel. | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12/7/17 | 1915 | G | S | 1712199-01 | 1 | 1 | AG | | X | | | | | 001 | | |
| | 12/7/17 | 1919 | G | S | 1712199-02 | 1 | 1 | AG | | X | | | | | 002 | | |
| | 12/7/17 | 1923 | G | S | 1712199-03 | 1 | 1 | AG | | X | | | | | 003 | | |
| | 12/7/17 | 1927 | G | S | 1712199-04 | 1 | 1 | AG | | X | | | | | 004 | | |
| | 12/7/17 | 1931 | G | S | 1712199-05 | 1 | 1 | AG | | X | | | | | 005 | | |
| | 12/7/17 | 1935 | G | S | 1712199-06 | 1 | 1 | AG | | X | | | | | 006 | | |
| | 12/7/17 | 1939 | G | S | 1712199-07 | 1 | 1 | AG | | X | | | | | 007 | | |
| | 12/7/17 | 1943 | G | S | 1712199-08 | 1 | 1 | AG | | X | | | | | 008 | | |
| | 12/7/17 | 1947 | G | S | 1712199-09 | 1 | 1 | AG | | X | | | | | 009 | | |
| | 12/7/17 | 1951 | G | S | 1712199-10 | 1 | 1 | AG | | X | | | | | 010 | | |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA: X

Cooler Temperature: 4.0

Internal Use Only

[ ] Pickup

[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| | | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | 12/12/17 800 Tc 4.0 | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 30Aug2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.21** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS Laboratory

**Project #:** WO#: 10414060

10414060

**Courier:** ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 1Z037 497 1545 4356 77

**Custody Seal on Cooler/Box Present?** ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☑ No

**Thermometer Used:** ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

**Cooler Temp Read (°C):** 3.9 **Cooler Temp Corrected (°C):** 4.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** ME 12/12/17

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | | | COMMENTS: |
|---|---|---|---|---|
| Chain of Custody Present? | ☑ Yes | ☐ No | | 1. |
| Chain of Custody Filled Out? | ☑ Yes | ☐ No | | 2. |
| Chain of Custody Relinquished? | ☐ Yes | ☑ No | | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes | ☑ No | ☐ N/A | 4. |
| Samples Arrived within Hold Time? | ☑ Yes | ☐ No | | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes | ☑ No | | 6. |
| **Rush Turn Around Time Requested?** | ☐ Yes | ☑ No | | 7. |
| Sufficient Volume? | ☑ Yes | ☐ No | | 8. |
| Correct Containers Used? | ☑ Yes | ☐ No | | 9. |
| -Pace Containers Used? | ☐ Yes | ☑ No | | |
| Containers Intact? | ☑ Yes | ☐ No | | 10. |
| Filtered Volume Received for Dissolved Tests? | ☐ Yes | ☐ No | ☑ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? | ☑ Yes | ☐ No | | 12. |
| -Includes Date/Time/ID/Analysis Matrix: SL | | | | |
| All containers needing acid/base preservation have been checked? | ☐ Yes | ☐ No | ☑ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes | ☐ No | ☑ N/A | Sample # |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes | ☐ No | ☑ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes | ☐ No | ☑ N/A | 14. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☑ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☑ N/A | |
| Pace Trip Blank Lot # (if purchased): | | | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

**Project Manager Review:** Joanne Richardson **Date:** 12-12-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix B

Sample Analysis  Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-01 | | | |
| Lab Sample ID | 10414060001 | | | |
| Filename | U171217A_04 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid | |
| % Moisture | 3.1 | Dilution | NA | |
| Dry Weight Extracted | 10.5 g | Collected | 12/07/2017 | 19:15 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 06:12 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 51 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 48 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 49 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 50 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 50 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 60 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 67 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 67 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 48 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 55 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 61 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 41 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 51 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 34 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 52 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-02 | | | |
| Lab Sample ID | 10414060002 | | | |
| Filename | U171217A_05 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.0 g | Matrix | Solid | |
| % Moisture | 3.2 | Dilution | NA | |
| Dry Weight Extracted | 10.6 g | Collected | 12/07/2017 | 19:19 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 06:56 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 54 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 55 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 75 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 69 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 38 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 64 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-03 | | | |
| Lab Sample ID | 10414060003 | | | |
| Filename | U171217A_06 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.0 g | Matrix | Solid | |
| % Moisture | 3.2 | Dilution | NA | |
| Dry Weight Extracted | 10.6 g | Collected | 12/07/2017 | 19:23 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 07:39 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 55 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 53 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 54 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 74 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 72 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 61 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 67 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 47 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 58 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 37 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-04 | | | |
| Lab Sample ID | 10414060004 | | | |
| Filename | U171217A_07 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 10.8 g | Matrix | Solid | |
| % Moisture | 3.4 | Dilution | NA | |
| Dry Weight Extracted | 10.4 g | Collected | 12/07/2017 | 19:27 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 08:23 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 63 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 59 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 61 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 70 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 74 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 76 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 72 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 42 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 71 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-05 | | | |
| Lab Sample ID | 10414060005 | | | |
| Filename | U171217A_08 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 11.2 g | Matrix | Solid | |
| % Moisture | 3.3 | Dilution | NA | |
| Dry Weight Extracted | 10.8 g | Collected | 12/07/2017 | 19:31 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 09:06 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 59 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 58 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 59 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 67 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 68 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 58 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 65 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 48 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 56 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 40 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 62 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712199-06 | | |
| Lab Sample ID | 10414060006 | | |
| Filename | U171217A_09 | | |
| Injected By | BAL | | |
| Total Amount Extracted | 12.3 g | Matrix | Solid |
| % Moisture | 11.4 | Dilution | NA |
| Dry Weight Extracted | 10.9 g | Collected | 12/07/2017 19:35 |
| ICAL ID | U171107 | Received | 12/12/2017 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 09:50 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 50 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 45 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 48 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 49 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 47 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 79 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 89 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 82 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 50 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 77 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 78 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 70 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 51 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 64 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 37 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 49 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-07 | | | |
| Lab Sample ID | 10414060007 | | | |
| Filename | U171217A_10 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.1 g | Matrix | Solid | |
| % Moisture | 10.7 | Dilution | NA | |
| Dry Weight Extracted | 10.8 g | Collected | 12/07/2017 | 19:39 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 10:34 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 55 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 56 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 67 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 74 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 60 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 69 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 41 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-08 | | | |
| Lab Sample ID | 10414060008 | | | |
| Filename | U171217A_11 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.2 g | Matrix | Solid | |
| % Moisture | 10.3 | Dilution | NA | |
| Dry Weight Extracted | 10.9 g | Collected | 12/07/2017 | 19:43 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 11:18 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 54 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 59 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 61 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 72 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 77 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 80 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 74 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 64 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 43 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-09 | | | |
| Lab Sample ID | 10414060009 | | | |
| Filename | U171217A_12 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.0 g | Matrix | Solid | |
| % Moisture | 9.6 | Dilution | NA | |
| Dry Weight Extracted | 10.8 g | Collected | 12/07/2017 | 19:47 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 12:02 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 55 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 49 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 52 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 51 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 70 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 80 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 76 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 61 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 74 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 65 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 49 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 38 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712199-10 | | | |
| Lab Sample ID | 10414060010 | | | |
| Filename | U171217A_13 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.2 g | Matrix | Solid | |
| % Moisture | 9.7 | Dilution | NA | |
| Dry Weight Extracted | 11.0 g | Collected | 12/07/2017 | 19:51 |
| ICAL ID | U171107 | Received | 12/12/2017 | 08:00 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Extracted | 12/13/2017 | 14:50 |
| Method Blank ID | BLANK-59101 | Analyzed | 12/17/2017 | 12:45 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 58 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 60 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 78 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 77 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 71 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 49 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 60 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 37 R |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 63 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-59101 | Matrix | Solid |
| Filename | U171216B_07 | Dilution | NA |
| Total Amount Extracted | 10.0 g | Extracted | 12/13/2017 14:50 |
| ICAL ID | U171107 | Analyzed | 12/16/2017 18:33 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Injected By | BAL |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 53 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 52 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 51 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 54 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 72 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 71 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 62 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 41 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-59102 | | |
| Filename | U171216B_06 | Matrix | Solid |
| Total Amount Extracted | 10.6 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/13/2017 14:50 |
| CCal Filename(s) | U171216B_03 & U171216B_19 | Analyzed | 12/16/2017 17:49 |
| Method Blank ID | BLANK-59101 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 91 | 2,3,7,8-TCDF-13C | 2.0 | 59 |
| Total TCDF | | | | 2,3,7,8-TCDD-13C | 2.0 | 57 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.0 | 56 |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 93 | 2,3,4,7,8-PeCDF-13C | 2.0 | 57 |
| Total TCDD | | | | 1,2,3,7,8-PeCDD-13C | 2.0 | 60 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.0 | 70 |
| 1,2,3,7,8-PeCDF | 1.0 | 0.95 | 95 | 1,2,3,6,7,8-HxCDF-13C | 2.0 | 79 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.86 | 86 | 2,3,4,6,7,8-HxCDF-13C | 2.0 | 81 |
| Total PeCDF | | | | 1,2,3,7,8,9-HxCDF-13C | 2.0 | 64 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.0 | 68 |
| 1,2,3,7,8-PeCDD | 1.0 | 0.87 | 87 | 1,2,3,6,7,8-HxCDD-13C | 2.0 | 73 |
| Total PeCDD | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 66 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 54 |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.94 | 94 | 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 64 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.88 | 88 | OCDD-13C | 4.0 | 44 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.84 | 84 | | | |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.85 | 85 | 1,2,3,4-TCDD-13C | 2.0 | NA |
| Total HxCDF | | | | 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 1,2,3,4,7,8-HxCDD | 1.0 | 1.0 | 100 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.98 | 98 | | | |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.95 | 95 | | | |
| Total HxCDD | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.94 | 94 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.93 | 93 | | | |
| Total HpCDF | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.85 | 85 | | | |
| Total HpCDD | | | | | | |
| OCDF | 2.0 | 2.0 | 100 | | | |
| OCDD | 2.0 | 1.9 | 94 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712199-01 | | |
| Lab Sample ID | 10414060001-MS | | |
| Filename | U171217A_01 | Matrix | Solid |
| Total Amount Extracted | 10.8 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/13/2017 14:50 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Analyzed | 12/17/2017 04:01 |
| Method Blank ID | BLANK-59101 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.19 | 95 | 2,3,7,8-TCDF-13C | 2.00 | 61 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 58 |
| 2,3,7,8-TCDD | 0.20 | 0.20 | 99 | 2,3,4,7,8-PeCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 66 |
| 1,2,3,7,8-PeCDF | 1.00 | 0.99 | 99 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 73 |
| 2,3,4,7,8-PeCDF | 1.00 | 0.86 | 86 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 74 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDD | 1.00 | 0.94 | 94 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 70 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 50 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 0.97 | 97 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.90 | 90 | OCDD-13C | 4.00 | 40 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.85 | 85 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.85 | 85 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 0.99 | 99 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 66 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.96 | 96 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.95 | 95 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 0.96 | 96 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 0.87 | 87 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 0.85 | 85 | | | |
| OCDF | 2.00 | 1.96 | 98 | | | |
| OCDD | 2.00 | 1.99 | 99 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712199-01 | | |
| Lab Sample ID | 10414060001-MSD | | |
| Filename | U171217A_02 | Matrix | Solid |
| Total Amount Extracted | 10.7 g | Dilution | NA |
| ICAL ID | U171107 | Extracted | 12/13/2017 14:50 |
| CCal Filename(s) | U171216B_19 & U171217A_17 | Analyzed | 12/17/2017 04:45 |
| Method Blank ID | BLANK-59101 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.21 | 105 | 2,3,7,8-TCDF-13C | 2.00 | 53 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 52 |
| 2,3,7,8-TCDD | 0.20 | 0.21 | 103 | 2,3,4,7,8-PeCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDF | 1.00 | 1.04 | 104 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 67 |
| 2,3,4,7,8-PeCDF | 1.00 | 0.93 | 93 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 67 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 52 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 55 |
| 1,2,3,7,8-PeCDD | 1.00 | 0.92 | 92 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 65 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 45 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 0.96 | 96 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 55 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.95 | 95 | OCDD-13C | 4.00 | 36 R |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.88 | 88 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.98 | 98 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 1.05 | 105 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.99 | 99 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.97 | 97 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 0.97 | 97 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 0.90 | 90 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 0.89 | 89 | | | |
| OCDF | 2.00 | 2.01 | 101 | | | |
| OCDD | 2.00 | 1.93 | 96 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.
R = Recovery outside target range

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spike Sample Results

Client - ESS Laboratory

| | | | | | |
|---|---|---|---|---|---|
| Client Sample ID | 1712199-01 | | | Dry Weights | |
| Lab Sample ID | 10414060001 | Sample Filename | U171217A_04 | Sample Amount | 10.5 g |
| MS ID | 10414060001-MS | MS Filename | U171217A_01 | MS Amount | 10.5 g |
| MSD ID | 10414060001-MSD | MSD Filename | U171217A_02 | MSD Amount | 10.4 g |

| Analyte | Sample Conc. ng/Kg | MS/MSD Qs (ng) | MS Qm (ng) | MSD Qm (ng) | RPD | Background Subtracted MS % Rec. | MSD % Rec. | RPD |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.000 | 0.20 | 0.19 | 0.21 | 10.0 | 95 | 105 | 10.0 |
| 2,3,7,8-TCDD | 0.000 | 0.20 | 0.20 | 0.21 | 3.9 | 99 | 103 | 3.9 |
| 1,2,3,7,8-PeCDF | 0.000 | 1.00 | 0.99 | 1.04 | 5.3 | 99 | 104 | 5.3 |
| 2,3,4,7,8-PeCDF | 0.000 | 1.00 | 0.86 | 0.93 | 7.7 | 86 | 93 | 7.7 |
| 1,2,3,7,8-PeCDD | 0.000 | 1.00 | 0.94 | 0.92 | 1.8 | 94 | 92 | 1.8 |
| 1,2,3,4,7,8-HxCDF | 0.000 | 1.00 | 0.97 | 0.96 | 0.7 | 97 | 96 | 0.7 |
| 1,2,3,6,7,8-HxCDF | 0.000 | 1.00 | 0.90 | 0.95 | 5.0 | 90 | 95 | 5.0 |
| 2,3,4,6,7,8-HxCDF | 0.000 | 1.00 | 0.85 | 0.88 | 4.3 | 85 | 88 | 4.3 |
| 1,2,3,7,8,9-HxCDF | 0.000 | 1.00 | 0.85 | 0.98 | 15.0 | 85 | 98 | 15.0 |
| 1,2,3,4,7,8-HxCDD | 0.000 | 1.00 | 0.99 | 1.05 | 6.2 | 99 | 105 | 6.2 |
| 1,2,3,6,7,8-HxCDD | 0.000 | 1.00 | 0.96 | 0.99 | 3.8 | 96 | 99 | 3.8 |
| 1,2,3,7,8,9-HxCDD | 0.000 | 1.00 | 0.95 | 0.97 | 1.6 | 95 | 97 | 1.6 |
| 1,2,3,4,6,7,8-HpCDF | 0.000 | 1.00 | 0.96 | 0.97 | 0.8 | 96 | 97 | 0.8 |
| 1,2,3,4,7,8,9-HpCDF | 0.000 | 1.00 | 0.87 | 0.90 | 3.6 | 87 | 90 | 3.6 |
| 1,2,3,4,6,7,8-HpCDD | 0.000 | 1.00 | 0.85 | 0.89 | 4.4 | 85 | 89 | 4.4 |
| OCDF | 0.000 | 2.00 | 1.96 | 2.01 | 2.5 | 98 | 101 | 2.5 |
| OCDD | 0.000 | 2.00 | 1.99 | 1.93 | 3.2 | 99 | 96 | 3.2 |

**Definitions**

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

ESS Laboratory

Changes made 12/11/17 - ML

# CHAIN OF CUSTODY

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

**ESS Lab #** 1712199

**Turn Time** 5-Day **Rush**

**Regulatory State**

**Is this project for any of the following?:** ○CT RCP ◉MA MCP ○RGP

**Reporting Limits** S-1

**Electonic Deliverables** ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 12/07/17 | 7:15 PM | Grab | Soil | Type A - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 12/07/17 | 7:19 PM | Grab | Soil | Type A - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 12/07/17 | 7:23 PM | Grab | Soil | Type A - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 12/07/17 | 7:27 PM | Grab | Soil | Type A - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 12/07/17 | 7:31 PM | Grab | Soil | Type A - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 12/07/17 | 7:35 PM | Grab | Soil | Type C - Capping Sand - 014 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 12/07/17 | 7:39 PM | Grab | Soil | Type C - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 12/07/17 | 7:43 PM | Grab | Soil | Type C - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 12/07/17 | 7:47 PM | Grab | Soil | Type C - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 12/07/17 | 7:51 PM | Grab | Soil | Type C - Capping Sand - 018 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 Trip Blank NC 12/8/17

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: 5.3 °C Ia

KPB 12/8/17 8:40

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] | [signature] 12/8/17 6:00 | [signature] 12/8/17 8:40 | [signature] 12/8/17 0920 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS 12/08/17 | | | |

Changes made 12/11/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1712199

Turn Time ~~5-Day~~ Rush due 12/12/17

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 12/07/17 | 7:15 PM | Grab | Soil | Type A - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 12/07/17 | 7:19 PM | Grab | Soil | Type A - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 12/07/17 | 7:23 PM | Grab | Soil | Type A - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 12/07/17 | 7:27 PM | Grab | Soil | Type A - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 12/07/17 | 7:31 PM | Grab | Soil | Type A - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 12/07/17 | 7:35 PM | Grab | Soil | Type C - Capping Sand - 014 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 12/07/17 | 7:39 PM | Grab | Soil | Type C - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 12/07/17 | 7:43 PM | Grab | Soil | Type C - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 12/07/17 | 7:47 PM | Grab | Soil | Type C - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 12/07/17 | 7:51 PM | Grab | Soil | Type C - Capping Sand - 018 | X | X | X | X | X | X | X | X | X | X | X |
| 11 | Trip Blank | | | | | | | | | | | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: ✓
Seals Intact: NA
Cooler Temperature: 5.3 °C

KPB 12/8/17 8:40

**Sampled by :** Aggregate Industries QC

**Comments:** Please specify "Other" preservative and containers types in this space

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] | [signature] 12/8/17 8:40 | [signature] 12/8/17 8:40 | [signature] 12/8/17 0920 |
| **Relinquished by: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** | **Relinquished By: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** |
| Devon Wilton SPS 12/08/17 | | | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712199
Date Received: 12/8/2017
Project Due Date: 12/13/2017
Days for Project: 3 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No
    ESS Sample IDs: 01 - 10
    Analysis: GS.
    TAT: 72 hr
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
    b. Low Level VOA vials frozen: Date: _____ Time: _____ By: _____

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? _____ Date: _____ Time: _____ By: _____

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 189114 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 189115 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 189125 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 01 | 189145 | Yes | NA | Yes | Other | NP | |
| 01 | 189155 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 189174 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 189175 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 189112 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 189113 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 189124 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 189144 | Yes | NA | Yes | Other | NP | |
| 02 | 189154 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 189172 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 189173 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 189110 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 189111 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 189123 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 189143 | Yes | NA | Yes | Other | NP | |
| 03 | 189153 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 189170 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 189171 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 189108 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 189109 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 189122 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712199
Date Received: 12/8/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 189142 | Yes | NA | Yes | Other | NP |
| 04 | 189152 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 04 | 189168 | Yes | NA | Yes | VOA Vial - Other | Other |
| 04 | 189169 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 189106 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 189107 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 189121 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 189141 | Yes | NA | Yes | Other | NP |
| 05 | 189151 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 189166 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 189167 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 189104 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 189105 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 189120 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 189140 | Yes | NA | Yes | Other | NP |
| 06 | 189150 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 189164 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 189165 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 189102 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 189103 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 189119 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 189139 | Yes | NA | Yes | Other | NP |
| 07 | 189149 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 189162 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 189163 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 189100 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 189101 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 189118 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 189138 | Yes | NA | Yes | Other | NP |
| 08 | 189148 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 189160 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 189161 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 189098 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 189099 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 189117 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 189137 | Yes | NA | Yes | Other | NP |
| 09 | 189147 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 189158 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 189159 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 189096 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 189097 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 189116 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 189136 | Yes | NA | Yes | Other | NP |
| 10 | 189146 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 189156 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 189157 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 189176 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 11 | 189177 | Yes | NA | Yes | VOA Vial - Other | Other |

2nd Review
Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/8/17 0953

Reviewed By: _____ Date & Time: 12/8/17 1002

Delivered By: _____

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712199 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Reporting Limits | S-1 |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 12/07/17 | 7:15 PM | Grab | Soil | Type A - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 12/07/17 | 7:19 PM | Grab | Soil | Type A - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 12/07/17 | 7:23 PM | Grab | Soil | Type A - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 12/07/17 | 7:27 PM | Grab | Soil | Type A - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 12/07/17 | 7:31 PM | Grab | Soil | Type A - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 12/07/17 | 7:35 PM | Grab | Soil | Type C - Capping Sand - 014 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 12/07/17 | 7:39 PM | Grab | Soil | Type C - Capping Sand - 015 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 12/07/17 | 7:43 PM | Grab | Soil | Type C - Capping Sand - 016 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 12/07/17 | 7:47 PM | Grab | Soil | Type C - Capping Sand - 017 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 12/07/17 | 7:51 PM | Grab | Soil | Type C - Capping Sand - 018 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

11 Trip Blank NC 12/8/17

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present: Y
Seals Intact: NA
Cooler Temperature: 5.3 °C Ia

KPB 12/8/17 8:40

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] | [signature] 12/8/17 6:00 | [signature] 12/8/17 8:40 | [signature] 12/8/17 0920 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS 12/08/17 | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1712347**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 4:36 pm, Dec 26, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
Pace Analytical - Minneapolis, MN Dioxin

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

## SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on December 14, 2017 at 18:20.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712347-01 | Type C - Capping Sand - 019 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-02 | Type C - Capping Sand - 020 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-03 | Type C - Capping Sand - 021 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-04 | Type C - Capping Sand - 022 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-05 | Type C - Capping Sand - 023 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-06 | Type C - Capping Sand - 024 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-07 | Type C - Capping Sand - 025 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-08 | Type B - Capping Sand - 001 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-09 | Type B - Capping Sand - 002 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-10 | Type B - Capping Sand - 003 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-11 | Type B - Capping Sand - 004 | Soil | 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

| | |
|---|---|
| 1712347-09 | **Surrogate recovery(ies) above upper control limit (S+).** |
| | 1,2-Dichloroethane-d4 (133% @ 70-130%) |
| 1712347-10 | **Surrogate recovery(ies) above upper control limit (S+).** |
| | 1,2-Dichloroethane-d4 (134% @ 70-130%) |
| 1712347-11 | **Surrogate recovery(ies) above upper control limit (S+).** |
| | 1,2-Dichloroethane-d4 (131% @ 70-130%) |
| C7L0260-CCV1 | **Continuing Calibration %Diff/Drift is above control limit (CD+).** |
| | 1,1,1-Trichloroethane (21% @ 20%), 2,2-Dichloropropane (21% @ 20%), Bromodichloromethane (26% @ 20%) |
| C7L0260-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | Naphthalene (22% @ 20%), Tetrahydrofuran (24% @ 20%) |
| C7L0261-CCV1 | **Continuing Calibration %Diff/Drift is above control limit (CD+).** |
| | 2,2-Dichloropropane (21% @ 20%) |
| C7L0261-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | 1,4-Dioxane (23% @ 20%), Tetrahydrofuran (23% @ 20%) |
| CL71816-BS1 | **Blank Spike recovery is above upper control limit (B+).** |
| | Bromomethane (134% @ 70-130%) |

**8151A Chlorinated Herbicides**

| | |
|---|---|
| 1712347-08 | **Modified result** |
| | MCPA , MCPA [2C] |
| 1712347-08 | **Peaks found in the retention time window for MCPA did not confirm by GC/MS.** |

**8270D Semi-Volatile Organic Compounds**

| | |
|---|---|
| C7L0207-CCV1 | **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration** |
| | 2,4-Dinitrotoluene (96% @ 80-120%), 2,6-Dinitrotoluene (96% @ 80-120%) |
| C7L0207-CCV1 | **Calibration required quadratic regression (Q).** |
| | 2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (102% @ 80-120%) |
| C7L0207-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | N-Nitrosodimethylamine (30% @ 20%) |
| C7L0229-CCV1 | **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration** |
| | 2,4-Dinitrotoluene (100% @ 80-120%), 2,6-Dinitrotoluene (99% @ 80-120%) |
| C7L0229-CCV1 | **Calibration required quadratic regression (Q).** |
| | 2,4-Dinitrophenol (113% @ 80-120%), Pentachlorophenol (96% @ 80-120%) |
| C7L0229-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | N-Nitrosodimethylamine (32% @ 20%) |
| C7L0275-CCV1 | **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration** |
| | 2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (100% @ 80-120%) |
| C7L0275-CCV1 | **Calibration required quadratic regression (Q).** |
| | 2,4-Dinitrophenol (142% @ 80-120%), Pentachlorophenol (103% @ 80-120%) |
| C7L0275-CCV1 | **Continuing Calibration %Diff/Drift is above control limit (CD+).** |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712347

2,4-Dinitrophenol (42% @ 20%)

C7L0275-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
bis(2-Chloroethyl)ether (24% @ 20%), N-Nitrosodimethylamine (21% @ 20%), Phenol-d6 (21% @ 20%)

C7L0304-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (103% @ 80-120%)

C7L0304-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (119% @ 80-120%), Pentachlorophenol (111% @ 80-120%)

C7L0304-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (22% @ 20%), N-Nitrosodimethylamine (21% @ 20%)

**Classical Chemistry**

1712347-03 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-05 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-07 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

**Total Metals**

CL71841-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (21% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:37 | 2.2 | 100 | CL71841 |
| **Arsenic** | **11.0** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Barium** | **22.1** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Beryllium** | **0.47** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Chromium** | **48.8** (0.97) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Lead** | **24.9** (4.84) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| Mercury | ND (0.030) | | 7471B | | 1 | MJV | 12/19/17 13:27 | 0.71 | 40 | CL71842 |
| **Nickel** | **22.3** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:37 | 2.2 | 100 | CL71841 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Thallium** | **0.51** (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:37 | 2.2 | 100 | CL71841 |
| **Vanadium** | **15.9** (0.97) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Zinc** | **28.0** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0872) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Acetone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Benzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromoform | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chloroform | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Styrene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Toluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Xylene O | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *126 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *99 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *118 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *95 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0216) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *108 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *65 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *89 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| 2,4-D | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| MCPA | ND (2.45) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| MCPP | ND (2.48) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *77 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 1,2-Dichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 1,3-Dichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 1,4-Dichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4,5-Trichlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4,6-Trichlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dichlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dimethylphenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dinitrophenol | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dinitrotoluene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,6-Dinitrotoluene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Chloronaphthalene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Chlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Methylnaphthalene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Methylphenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Nitrophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 3,3′-Dichlorobenzidine | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 3+4-Methylphenol | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 4-Bromophenyl-phenylether | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 4-Chloroaniline | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 4-Nitrophenol | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Acenaphthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Acenaphthylene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Acetophenone | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Aniline | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Anthracene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Azobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(a)anthracene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(a)pyrene | ND (0.188) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(b)fluoranthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(g,h,i)perylene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(k)fluoranthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| bis(2-Chloroethyl)ether | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| bis(2-chloroisopropyl)Ether | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| bis(2-Ethylhexyl)phthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Butylbenzylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Chrysene | ND (0.188) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Dibenzo(a,h)Anthracene | ND (0.188) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Dibenzofuran | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Diethylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Dimethylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Di-n-butylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Di-n-octylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Fluoranthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Fluorene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Hexachlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Hexachlorobutadiene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Hexachloroethane | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Indeno(1,2,3-cd)Pyrene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Isophorone | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Naphthalene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Nitrobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| N-Nitrosodimethylamine | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Pentachlorophenol | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Phenanthrene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Phenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Pyrene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *69 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *83 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *76 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *64 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *67 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *62 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *75 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (100) | | 9060 | | 1 | DEL | 12/22/17 18:00 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:42 | 2.23 | 100 | CL71841 |
| **Arsenic** | **5.93** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Barium** | **16.7** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Beryllium** | **0.44** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Chromium** | **44.1** (0.96) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Lead** | **20.4** (4.78) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/19/17 13:33 | 0.85 | 40 | CL71842 |
| **Nickel** | **22.1** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:42 | 2.23 | 100 | CL71841 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Thallium** | **0.61** (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:42 | 2.23 | 100 | CL71841 |
| **Vanadium** | **16.5** (0.96) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Zinc** | **28.1** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Acetone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *127 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *118 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0221) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *100 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *115 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *65 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *81 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *86 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| 2,4-D | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| MCPA | ND (2.45) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| MCPP | ND (2.48) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *82 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *87 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 1,2-Dichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 1,3-Dichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 1,4-Dichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4,5-Trichlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4,6-Trichlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dichlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dimethylphenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dinitrophenol | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dinitrotoluene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,6-Dinitrotoluene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Chloronaphthalene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Chlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Methylnaphthalene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Methylphenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Nitrophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 3,3′-Dichlorobenzidine | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 3+4-Methylphenol | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 4-Bromophenyl-phenylether | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 4-Chloroaniline | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 4-Nitrophenol | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Acenaphthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Acenaphthylene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Acetophenone | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Aniline | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Anthracene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Azobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(a)anthracene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(a)pyrene | ND (0.187) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(b)fluoranthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(g,h,i)perylene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(k)fluoranthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| bis(2-Chloroethyl)ether | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| bis(2-chloroisopropyl)Ether | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| bis(2-Ethylhexyl)phthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Butylbenzylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Chrysene | ND (0.187) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Dibenzo(a,h)Anthracene | ND (0.187) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Dibenzofuran | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Diethylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Dimethylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Di-n-butylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Di-n-octylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Fluoranthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Fluorene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Hexachlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Hexachlorobutadiene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Hexachloroethane | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Indeno(1,2,3-cd)Pyrene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Isophorone | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Naphthalene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Nitrobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| N-Nitrosodimethylamine | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Pentachlorophenol | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Phenanthrene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Phenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Pyrene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *67 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *81 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *69 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *72 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *62 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *61 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *75 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (100) | | 9060 | | 1 | DEL | 12/22/17 1:47 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.51) | | 6020A | | 20 | NAR | 12/19/17 15:48 | 2.1 | 100 | CL71841 |
| **Arsenic** | **9.90** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Barium** | **27.5** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Beryllium** | **0.48** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| Cadmium | ND (0.51) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Chromium** | **54.2** (1.02) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Lead** | **23.9** (5.11) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| Mercury | ND (0.033) | | 7471B | | 1 | MJV | 12/19/17 13:35 | 0.65 | 40 | CL71842 |
| **Nickel** | **24.3** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| Selenium | ND (0.51) | | 6020A | | 20 | NAR | 12/19/17 15:48 | 2.1 | 100 | CL71841 |
| Silver | ND (0.51) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Thallium** | **0.51** (0.51) | | 6020A | | 20 | NAR | 12/19/17 15:48 | 2.1 | 100 | CL71841 |
| **Vanadium** | **16.6** (1.02) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Zinc** | **27.1** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0894) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Acetone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Benzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromoform | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chloroform | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Styrene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Toluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Xylene O | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0219) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *91 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *68 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| MCPA | ND (2.44) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| MCPP | ND (2.47) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *93 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *102 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Acetophenone | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Aniline | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Anthracene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Azobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.184) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Chrysene | ND (0.184) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.184) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Fluorene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Isophorone | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Naphthalene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Phenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Pyrene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *71 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *86 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *73 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *82 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *70 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *63 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *74 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **TR 5400** (100) | | 9060 | | 1 | DEL | 12/22/17 18:50 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.50) | | 6020A | | 20 | NAR | 12/19/17 15:54 | 2.18 | 100 | CL71841 |
| **Arsenic** | **15.6** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Barium** | **22.0** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Beryllium** | **0.48** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Cadmium | ND (0.50) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Chromium** | **47.5** (0.99) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Lead** | **24.2** (4.95) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Mercury | ND (0.032) | | 7471B | | 1 | MJV | 12/19/17 13:37 | 0.66 | 40 | CL71842 |
| **Nickel** | **25.4** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Selenium | ND (0.50) | | 6020A | | 20 | NAR | 12/19/17 15:54 | 2.18 | 100 | CL71841 |
| Silver | ND (0.50) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Thallium | ND (0.50) | | 6020A | | 20 | NAR | 12/19/17 15:54 | 2.18 | 100 | CL71841 |
| **Vanadium** | **14.9** (0.99) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Zinc** | **28.0** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Acetone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Benzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromoform | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chloroform | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Styrene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Toluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Xylene O | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0220) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *93 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *106 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *62 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *86 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *57 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| 2,4-D | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| MCPA | ND (2.46) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| MCPP | ND (2.49) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *89 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *101 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Acetophenone | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Aniline | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Anthracene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Azobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.189) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Chrysene | ND (0.189) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.189) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Fluorene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Isophorone | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Naphthalene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Phenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Pyrene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *67 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *84 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *75 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *62 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *62 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *72 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **777** (100) | | 9060 | | 1 | DEL | 12/22/17 2:54 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.54) | | 6020A | | 20 | NAR | 12/19/17 16:00 | 2.05 | 100 | CL71841 |
| **Arsenic** | **12.8** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Barium** | **26.5** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Beryllium** | **0.49** (0.12) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Cadmium | ND (0.54) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Chromium** | **52.7** (1.08) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Lead** | **26.4** (5.41) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Mercury | ND (0.034) | | 7471B | | 1 | MJV | 12/19/17 13:39 | 0.65 | 40 | CL71842 |
| **Nickel** | **23.2** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Selenium | ND (0.54) | | 6020A | | 20 | NAR | 12/19/17 16:00 | 2.05 | 100 | CL71841 |
| Silver | ND (0.54) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Thallium | ND (0.54) | | 6020A | | 20 | NAR | 12/19/17 16:00 | 2.05 | 100 | CL71841 |
| **Vanadium** | **16.7** (1.08) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Zinc** | **28.6** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0909) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Acetone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Benzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromoform | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chloroform | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Styrene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Toluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Xylene O | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *125 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *93 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0231) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *107 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *93 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *93 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *64 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dalapon | ND (0.049) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dicamba [2C] | ND (0.010) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| MCPA | ND (2.53) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| MCPP | ND (2.56) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *78 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *82 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Acetophenone | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Aniline | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Anthracene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Azobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.197) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Chrysene | ND (0.197) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.197) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Fluorene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Isophorone | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Naphthalene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Phenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Pyrene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *62 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *74 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *63 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *69 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *57 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *61 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *55 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *66 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **TR 4100** (100) | | 9060 | | 1 | DEL | 12/22/17 19:07 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:18 | 2.27 | 100 | CL71841 |
| **Arsenic** | **10.4** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Barium** | **20.3** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Beryllium** | **0.46** (0.10) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Chromium** | **50.9** (0.94) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Lead** | **22.8** (4.70) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/19/17 13:41 | 0.84 | 40 | CL71842 |
| **Nickel** | **22.6** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:18 | 2.27 | 100 | CL71841 |
| Silver | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Thallium** | **0.60** (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:18 | 2.27 | 100 | CL71841 |
| **Vanadium** | **17.5** (0.94) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Zinc** | **29.6** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Acetone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Benzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromoform | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chloroform | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Styrene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Toluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Xylene O | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *130 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *94 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *121 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0221) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *104 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *117 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *70 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *85 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *66 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| MCPA | ND (2.43) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| MCPP | ND (2.46) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *76 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *75 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Acetophenone | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Aniline | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Anthracene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Azobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.186) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Chrysene | ND (0.186) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.186) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Fluorene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Isophorone | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Naphthalene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Phenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Pyrene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *61 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *78 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *62 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *69 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *56 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *59 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *54 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *71 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **778** (100) | | 9060 | | 1 | DEL | 12/22/17 3:27 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:23 | 2.4 | 100 | CL71841 |
| **Arsenic** | **8.49** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Barium** | **20.7** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Beryllium** | **0.48** (0.10) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| Cadmium | ND (0.44) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Chromium** | **47.7** (0.89) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Lead** | **22.6** (4.44) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| Mercury | ND (0.027) | | 7471B | | 1 | MJV | 12/19/17 13:43 | 0.78 | 40 | CL71842 |
| **Nickel** | **21.4** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| Selenium | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:23 | 2.4 | 100 | CL71841 |
| Silver | ND (0.44) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Thallium** | **0.54** (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:23 | 2.4 | 100 | CL71841 |
| **Vanadium** | **16.6** (0.89) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Zinc** | **30.3** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0019) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0951) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Acetone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Benzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromoform | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chloroform | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0019) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Styrene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Toluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Xylene O | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *130 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *121 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0221) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *49 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *57 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *68 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| MCPA | ND (2.40) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| MCPP | ND (2.43) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *92 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *98 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Acetophenone | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Aniline | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Anthracene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Azobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.184) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Chrysene | ND (0.184) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.184) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Fluorene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Isophorone | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Naphthalene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Phenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Pyrene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *57 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *73 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *57 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *63 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *52 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *54 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *50 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *71 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **TR 2710** (100) | | 9060 | | 1 | DEL | 12/22/17 19:56 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:29 | 2.17 | 100 | CL71841 |
| Arsenic | ND (2.36) | | 6010C | | 1 | KJK | 12/20/17 14:31 | 2.17 | 100 | CL71841 |
| **Barium** | **16.2** (2.36) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| **Beryllium** | **0.32** (0.10) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| **Chromium** | **16.7** (0.95) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Lead | ND (4.73) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Mercury | ND (0.033) | | 7471B | | 1 | MJV | 12/19/17 13:45 | 0.62 | 40 | CL71842 |
| **Nickel** | **16.8** (2.36) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:29 | 2.17 | 100 | CL71841 |
| Silver | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Thallium | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:29 | 2.17 | 100 | CL71841 |
| **Vanadium** | **56.0** (0.95) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| **Zinc** | **32.1** (2.36) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0016) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0814) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Acetone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Benzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromoform | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chloroform | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0016) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Styrene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Toluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Xylene O | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *120 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0210) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *99 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *112 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *66 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *79 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *82 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *71 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *74 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| MCPA | # ND (2.34) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| MCPP | ND (2.36) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *79 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *109 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Acetophenone | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Aniline | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Anthracene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Azobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.171) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Chrysene | ND (0.171) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.171) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Fluorene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Isophorone | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Naphthalene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Phenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Pyrene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *71 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *80 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *76 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *63 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *66 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *60 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *79 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **2500** (100) | | 9060 | | 1 | DEL | 12/22/17 4:00 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 12/19/17 16:35 | 2.24 | 100 | CL71841 |
| Arsenic | ND (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Barium** | **16.2** (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Beryllium** | **0.33** (0.10) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Chromium** | **17.6** (0.92) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Lead | ND (4.58) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Mercury | ND (0.032) | | 7471B | | 1 | MJV | 12/19/17 13:47 | 0.64 | 40 | CL71842 |
| **Nickel** | **17.9** (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 12/19/17 16:35 | 2.24 | 100 | CL71841 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 12/19/17 16:35 | 2.24 | 100 | CL71841 |
| **Vanadium** | **58.9** (0.92) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Zinc** | **33.4** (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0014) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0713) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Acetone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Benzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromoform | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chloroform | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0014) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Styrene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Toluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Xylene O | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *133 %* | *S+* | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *121 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *95 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0205) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *38 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *44 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| MCPA | ND (2.36) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| MCPP | ND (2.39) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *79 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dichlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dimethylphenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dinitrophenol | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Chloronaphthalene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Chlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Methylnaphthalene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Methylphenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Nitrophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 3+4-Methylphenol | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 4-Chloroaniline | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 4-Nitrophenol | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Acenaphthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Acenaphthylene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Acetophenone | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Aniline | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Anthracene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Azobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(a)anthracene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(a)pyrene | ND (0.170) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(b)fluoranthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(k)fluoranthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Butylbenzylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Chrysene | ND (0.170) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.170) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Dibenzofuran | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Diethylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Dimethylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Di-n-butylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Di-n-octylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Fluoranthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Fluorene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Hexachlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Hexachlorobutadiene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Hexachloroethane | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Isophorone | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Naphthalene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Nitrobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| N-Nitrosodimethylamine | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Pentachlorophenol | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Phenanthrene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Phenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Pyrene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *84 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *75 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *79 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *67 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *66 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *77 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **4230** (100) | | 9060 | | 1 | DEL | 12/22/17 20:13 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 16:41 | 2.15 | 100 | CL71841 |
| **Arsenic** | **2.52** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Barium** | **17.4** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Beryllium** | **0.36** (0.11) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Chromium** | **22.7** (0.96) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Lead | ND (4.78) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/19/17 13:49 | 0.8 | 40 | CL71842 |
| **Nickel** | **20.0** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 16:41 | 2.15 | 100 | CL71841 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Thallium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 16:41 | 2.15 | 100 | CL71841 |
| **Vanadium** | **56.0** (0.96) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Zinc** | **33.6** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0767) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Acetone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Benzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromoform | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chloroform | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Styrene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Toluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Xylene O | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *134 %* | *S+* | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *123 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Aldrin | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0203) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endrin | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *100 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *115 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *67 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *92 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| MCPA | ND (2.34) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| MCPP | ND (2.37) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *84 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *95 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dichlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dimethylphenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dinitrophenol | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Chloronaphthalene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Chlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Methylnaphthalene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Methylphenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Nitrophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 3+4-Methylphenol | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 4-Chloroaniline | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 4-Nitrophenol | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Acenaphthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Acenaphthylene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Acetophenone | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Aniline | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Anthracene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Azobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(a)anthracene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(a)pyrene | ND (0.165) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(b)fluoranthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(k)fluoranthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Butylbenzylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Chrysene | ND (0.165) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.165) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Dibenzofuran | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Diethylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Dimethylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Di-n-butylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Di-n-octylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Fluoranthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Fluorene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Hexachlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Hexachlorobutadiene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Hexachloroethane | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Isophorone | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Naphthalene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Nitrobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| N-Nitrosodimethylamine | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Pentachlorophenol | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Phenanthrene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Phenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Pyrene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *65 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *71 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *64 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *68 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *57 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *61 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *56 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *76 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **3150** (100) | | 9060 | | 1 | DEL | 12/22/17 21:03 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:47 | 2.35 | 100 | CL71841 |
| Arsenic | ND (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Barium** | **18.1** (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Beryllium** | **0.30** (0.10) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Cadmium | ND (0.44) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Chromium** | **19.2** (0.88) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Lead | ND (4.38) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Mercury | ND (0.033) | | 7471B | | 1 | MJV | 12/19/17 13:51 | 0.61 | 40 | CL71842 |
| **Nickel** | **18.8** (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Selenium | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:47 | 2.35 | 100 | CL71841 |
| Silver | ND (0.88) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Thallium | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:47 | 2.35 | 100 | CL71841 |
| **Vanadium** | **49.6** (0.88) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Zinc** | **34.2** (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0746) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Acetone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Benzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromoform | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chloroform | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Styrene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Toluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Xylene O | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *131 %* | *S+* | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *122 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0206) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *106 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *119 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *94 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *79 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| MCPA | ND (2.37) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| MCPP | ND (2.39) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *81 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *90 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dichlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dimethylphenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dinitrophenol | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Chloronaphthalene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Chlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Methylnaphthalene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Methylphenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Nitrophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 3+4-Methylphenol | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 4-Chloroaniline | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 4-Nitrophenol | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Acenaphthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Acenaphthylene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Acetophenone | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Aniline | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Anthracene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Azobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(a)anthracene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(a)pyrene | ND (0.177) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(b)fluoranthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(k)fluoranthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Butylbenzylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Chrysene | ND (0.177) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.177) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Dibenzofuran | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Diethylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Dimethylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Di-n-butylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Di-n-octylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Fluoranthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Fluorene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Hexachlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Hexachlorobutadiene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Hexachloroethane | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Isophorone | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Naphthalene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Nitrobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| N-Nitrosodimethylamine | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Pentachlorophenol | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Phenanthrene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Phenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Pyrene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *72 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *79 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *73 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *77 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *66 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *64 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *79 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **3310** (100) | | 9060 | | 1 | DEL | 12/22/17 5:23 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CL71841 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Antimony | ND | 0.50 | mg/kg wet | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Selenium | ND | 0.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Thallium | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 58.6 | 4.72 | mg/kg wet | 48.00 | | 122 | 0-238 | | | |
| Arsenic | 115 | 9.43 | mg/kg wet | 123.0 | | 93 | 80-120 | | | |
| Barium | 280 | 9.43 | mg/kg wet | 253.0 | | 111 | 80-120 | | | |
| Beryllium | 176 | 0.42 | mg/kg wet | 192.0 | | 92 | 80-120 | | | |
| Cadmium | 198 | 1.89 | mg/kg wet | 224.0 | | 88 | 80-120 | | | |
| Chromium | 174 | 3.77 | mg/kg wet | 179.0 | | 97 | 80-120 | | | |
| Lead | 146 | 18.9 | mg/kg wet | 145.0 | | 101 | 80-120 | | | |
| Nickel | 140 | 9.43 | mg/kg wet | 143.0 | | 98 | 80-120 | | | |
| Selenium | 43.9 | 4.72 | mg/kg wet | 42.40 | | 104 | 80-120 | | | |
| Silver | 80.9 | 1.89 | mg/kg wet | 81.60 | | 99 | 80-120 | | | |
| Thallium | 50.7 | 4.72 | mg/kg wet | 52.00 | | 98 | 80-120 | | | |
| Vanadium | 67.1 | 3.77 | mg/kg wet | 72.30 | | 93 | 80-120 | | | |
| Zinc | 710 | 9.43 | mg/kg wet | 770.0 | | 92 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 65.3 | 4.81 | mg/kg wet | 48.00 | | 136 | 0-238 | 11 | 30 | |
| Arsenic | 117 | 9.62 | mg/kg wet | 123.0 | | 95 | 80-120 | 2 | 20 | |
| Barium | 227 | 9.62 | mg/kg wet | 253.0 | | 90 | 80-120 | 21 | 20 | D+ |
| Beryllium | 180 | 0.42 | mg/kg wet | 192.0 | | 94 | 80-120 | 2 | 20 | |
| Cadmium | 207 | 1.92 | mg/kg wet | 224.0 | | 92 | 80-120 | 4 | 20 | |
| Chromium | 184 | 3.85 | mg/kg wet | 179.0 | | 103 | 80-120 | 5 | 20 | |
| Lead | 149 | 19.2 | mg/kg wet | 145.0 | | 102 | 80-120 | 1 | 20 | |
| Nickel | 144 | 9.62 | mg/kg wet | 143.0 | | 101 | 80-120 | 2 | 20 | |
| Selenium | 47.6 | 4.81 | mg/kg wet | 42.40 | | 112 | 80-120 | 8 | 30 | |
| Silver | 84.1 | 1.92 | mg/kg wet | 81.60 | | 103 | 80-120 | 4 | 20 | |
| Thallium | 56.3 | 4.81 | mg/kg wet | 52.00 | | 108 | 80-120 | 10 | 30 | |
| Vanadium | 70.6 | 3.85 | mg/kg wet | 72.30 | | 98 | 80-120 | 5 | 20 | |
| Zinc | 747 | 9.62 | mg/kg wet | 770.0 | | 97 | 80-120 | 5 | 20 | |
| **Reference** | | | | | | | | | | |
| Lead | 4270 | 17.9 | mg/kg wet | 4490 | | 95 | 83-113 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CL71842 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 15.5 | 1.90 | mg/kg wet | 17.80 | | 87 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 18.7 | 1.46 | mg/kg wet | 17.80 | | 105 | 80-120 | 19 | 20 | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0602* | | mg/kg wet | *0.05000* | | *120* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0467* | | mg/kg wet | *0.05000* | | *93* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0573* | | mg/kg wet | *0.05000* | | *115* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0489* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.0431 | 0.0020 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0447 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 1,4-Dioxane | 0.783 | 0.100 | mg/kg wet | 1.000 | | 78 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 2-Butanone | 0.225 | 0.0100 | mg/kg wet | 0.2500 | | 90 | 70-130 | | | |
| 2-Chlorotoluene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 2-Hexanone | 0.187 | 0.0100 | mg/kg wet | 0.2500 | | 75 | 70-130 | | | |
| 4-Chlorotoluene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.194 | 0.0100 | mg/kg wet | 0.2500 | | 77 | 70-130 | | | |
| Acetone | 0.225 | 0.0100 | mg/kg wet | 0.2500 | | 90 | 70-130 | | | |
| Benzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Bromobenzene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Bromochloromethane | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Bromodichloromethane | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Bromoform | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Bromomethane | 0.0522 | 0.0100 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Carbon Disulfide | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Carbon Tetrachloride | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Chlorobenzene | 0.0435 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Chloroethane | 0.0441 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Chloroform | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Chloromethane | 0.0525 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Dibromochloromethane | 0.0440 | 0.0020 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Dibromomethane | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0488 | 0.0100 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Diethyl Ether | 0.0449 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| Di-isopropyl ether | 0.0417 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0432 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Ethylbenzene | 0.0428 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Hexachlorobutadiene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Isopropylbenzene | 0.0414 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Methylene Chloride | 0.0456 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Naphthalene | 0.0368 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | | | |
| n-Butylbenzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| n-Propylbenzene | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| sec-Butylbenzene | 0.0356 | 0.0050 | mg/kg wet | 0.05000 | | 71 | 70-130 | | | |
| Styrene | 0.0384 | 0.0050 | mg/kg wet | 0.05000 | | 77 | 70-130 | | | |
| tert-Butylbenzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| Tetrachloroethene | 0.0408 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | | | |
| Tetrahydrofuran | 0.0348 | 0.0050 | mg/kg wet | 0.05000 | | 70 | 70-130 | | | |
| Toluene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0418 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Trichloroethene | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Trichlorofluoromethane | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Vinyl Chloride | 0.0512 | 0.0100 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Xylene O | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Xylene P,M | 0.0857 | 0.0100 | mg/kg wet | 0.1000 | | 86 | 70-130 | | | |
| Xylenes (Total) | 0.130 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0575* | | mg/kg wet | *0.05000* | | *115* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0517* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0553* | | mg/kg wet | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0492* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 4 | 20 | |
| 1,1,1-Trichloroethane | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0464 | 0.0020 | mg/kg wet | 0.05000 | | 93 | 70-130 | 7 | 20 | |
| 1,1,2-Trichloroethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 7 | 20 | |
| 1,1-Dichloropropene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 5 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 5 | 20 | |
| 1,2,3-Trichloropropane | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 6 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 4 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 6 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| 1,2-Dibromoethane | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 5 | 20 | |
| 1,2-Dichlorobenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 6 | 20 | |
| 1,2-Dichloroethane | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| 1,2-Dichloropropane | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0480 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 7 | 20 | |
| 1,3-Dichlorobenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| 1,3-Dichloropropane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |
| 1,4-Dichlorobenzene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 5 | 20 | |
| 1,4-Dioxane | 0.838 | 0.100 | mg/kg wet | 1.000 | | 84 | 70-130 | 7 | 20 | |
| 2,2-Dichloropropane | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 5 | 20 | |
| 2-Butanone | 0.233 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | 4 | 20 | |
| 2-Chlorotoluene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 8 | 20 | |
| 2-Hexanone | 0.193 | 0.0100 | mg/kg wet | 0.2500 | | 77 | 70-130 | 3 | 20 | |
| 4-Chlorotoluene | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 5 | 20 | |
| 4-Isopropyltoluene | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 6 | 20 | |
| 4-Methyl-2-Pentanone | 0.201 | 0.0100 | mg/kg wet | 0.2500 | | 80 | 70-130 | 4 | 20 | |
| Acetone | 0.235 | 0.0100 | mg/kg wet | 0.2500 | | 94 | 70-130 | 4 | 20 | |
| Benzene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| Bromobenzene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 8 | 20 | |
| Bromochloromethane | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 3 | 20 | |
| Bromodichloromethane | 0.0548 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | 4 | 20 | |
| Bromoform | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| Bromomethane | 0.0576 | 0.0100 | mg/kg wet | 0.05000 | | 115 | 70-130 | 10 | 20 | |
| Carbon Disulfide | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| Carbon Tetrachloride | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |
| Chlorobenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| Chloroethane | 0.0456 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | 3 | 20 | |
| Chloroform | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| Chloromethane | 0.0537 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 2 | 20 | |
| cis-1,2-Dichloroethene | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| cis-1,3-Dichloropropene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| Dibromochloromethane | 0.0458 | 0.0020 | mg/kg wet | 0.05000 | | 92 | 70-130 | 4 | 20 | |
| Dibromomethane | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 3 | 20 | |
| Dichlorodifluoromethane | 0.0500 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Diethyl Ether | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 5 | 20 | |
| Di-isopropyl ether | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| Ethyl tertiary-butyl ether | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 6 | 20 | |
| Ethylbenzene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 5 | 20 | |
| Hexachlorobutadiene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 7 | 20 | |
| Isopropylbenzene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 8 | 20 | |
| Methyl tert-Butyl Ether | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 6 | 20 | |
| Methylene Chloride | 0.0472 | 0.0100 | mg/kg wet | 0.05000 | | 94 | 70-130 | 3 | 20 | |
| Naphthalene | 0.0392 | 0.0050 | mg/kg wet | 0.05000 | | 78 | 70-130 | 6 | 20 | |
| n-Butylbenzene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| n-Propylbenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 7 | 20 | |
| sec-Butylbenzene | 0.0378 | 0.0050 | mg/kg wet | 0.05000 | | 76 | 70-130 | 6 | 20 | |
| Styrene | 0.0401 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | 4 | 20 | |
| tert-Butylbenzene | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 8 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| Tertiary-amyl methyl ether | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 6 | 20 | |
| Tetrachloroethene | 0.0429 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | 5 | 20 | |
| Tetrahydrofuran | 0.0369 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | 6 | 20 | |
| Toluene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| trans-1,2-Dichloroethene | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 6 | 20 | |
| trans-1,3-Dichloropropene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 6 | 20 | |
| Trichloroethene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 3 | 20 | |
| Trichlorofluoromethane | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 4 | 20 | |
| Vinyl Chloride | 0.0524 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | 2 | 20 | |
| Xylene O | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 3 | 20 | |
| Xylene P,M | 0.0893 | 0.0100 | mg/kg wet | 0.1000 | | 89 | 70-130 | 4 | 20 | |
| Xylenes (Total) | 0.135 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0559* | | mg/kg wet | *0.05000* | | *112* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0505* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0544* | | mg/kg wet | *0.05000* | | *109* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0495* | | mg/kg wet | *0.05000* | | *99* | *70-130* | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0597* | | mg/kg wet | *0.05000* | | *119* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0568* | | mg/kg wet | *0.05000* | | *114* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0650 | 0.0050 | mg/kg wet | 0.05000 | | 130 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0510 | 0.0020 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0592 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0603 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0534 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dioxane | 0.950 | 0.100 | mg/kg wet | 1.000 | | 95 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0631 | 0.0050 | mg/kg wet | 0.05000 | | 126 | 70-130 | | | |
| 2-Butanone | 0.275 | 0.0100 | mg/kg wet | 0.2500 | | 110 | 70-130 | | | |
| 2-Chlorotoluene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 2-Hexanone | 0.222 | 0.0100 | mg/kg wet | 0.2500 | | 89 | 70-130 | | | |
| 4-Chlorotoluene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.240 | 0.0100 | mg/kg wet | 0.2500 | | 96 | 70-130 | | | |
| Acetone | 0.279 | 0.0100 | mg/kg wet | 0.2500 | | 112 | 70-130 | | | |
| Benzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Bromobenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Bromochloromethane | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromodichloromethane | 0.0635 | 0.0050 | mg/kg wet | 0.05000 | | 127 | 70-130 | | | |
| Bromoform | 0.0567 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| Bromomethane | 0.0670 | 0.0100 | mg/kg wet | 0.05000 | | 134 | 70-130 | | | B+ |
| Carbon Disulfide | 0.0567 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| Carbon Tetrachloride | 0.0628 | 0.0050 | mg/kg wet | 0.05000 | | 126 | 70-130 | | | |
| Chlorobenzene | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Chloroethane | 0.0541 | 0.0100 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| Chloroform | 0.0568 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| Chloromethane | 0.0637 | 0.0100 | mg/kg wet | 0.05000 | | 127 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Dibromochloromethane | 0.0504 | 0.0020 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Dibromomethane | 0.0539 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0615 | 0.0100 | mg/kg wet | 0.05000 | | 123 | 70-130 | | | |
| Diethyl Ether | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Di-isopropyl ether | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Ethylbenzene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Hexachlorobutadiene | 0.0590 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| Isopropylbenzene | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Methylene Chloride | 0.0554 | 0.0100 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Naphthalene | 0.0432 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| n-Butylbenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| n-Propylbenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| sec-Butylbenzene | 0.0421 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| Styrene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| tert-Butylbenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Tetrachloroethene | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Tetrahydrofuran | 0.0432 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Toluene | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Trichloroethene | 0.0539 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Trichlorofluoromethane | 0.0618 | 0.0050 | mg/kg wet | 0.05000 | | 124 | 70-130 | | | |
| Vinyl Chloride | 0.0640 | 0.0100 | mg/kg wet | 0.05000 | | 128 | 70-130 | | | |
| Xylene O | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Xylene P,M | 0.102 | 0.0100 | mg/kg wet | 0.1000 | | 102 | 70-130 | | | |
| Xylenes (Total) | 0.154 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0593* | | mg/kg wet | *0.05000* | | *119* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0511* | | mg/kg wet | *0.05000* | | *102* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0561* | | mg/kg wet | *0.05000* | | *112* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0477* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0538 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 1 | 20 | |
| 1,1,1-Trichloroethane | 0.0611 | 0.0050 | mg/kg wet | 0.05000 | | 122 | 70-130 | 6 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0496 | 0.0020 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| 1,1,2-Trichloroethane | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethane | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| 1,1-Dichloropropene | 0.0566 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 4 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 1 | 20 | |
| 1,2,3-Trichloropropane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 1 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.4 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 2 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| 1,2-Dibromoethane | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| 1,2-Dichlorobenzene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| 1,2-Dichloroethane | 0.0577 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 4 | 20 | |
| 1,2-Dichloropropane | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 2 | 20 | |
| 1,3-Dichlorobenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 0.2 | 20 | |
| 1,3-Dichloropropane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 2 | 20 | |
| 1,4-Dichlorobenzene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,4-Dioxane | 0.947 | 0.100 | mg/kg wet | 1.000 | | 95 | 70-130 | 0.4 | 20 | |
| 2,2-Dichloropropane | 0.0603 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | 5 | 20 | |
| 2-Butanone | 0.263 | 0.0100 | mg/kg wet | 0.2500 | | 105 | 70-130 | 4 | 20 | |
| 2-Chlorotoluene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| 2-Hexanone | 0.227 | 0.0100 | mg/kg wet | 0.2500 | | 91 | 70-130 | 2 | 20 | |
| 4-Chlorotoluene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 2 | 20 | |
| 4-Isopropyltoluene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| 4-Methyl-2-Pentanone | 0.232 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | 3 | 20 | |
| Acetone | 0.271 | 0.0100 | mg/kg wet | 0.2500 | | 108 | 70-130 | 3 | 20 | |
| Benzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| Bromobenzene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Bromochloromethane | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| Bromodichloromethane | 0.0603 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | 5 | 20 | |
| Bromoform | 0.0583 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | 3 | 20 | |
| Bromomethane | 0.0598 | 0.0100 | mg/kg wet | 0.05000 | | 120 | 70-130 | 11 | 20 | |
| Carbon Disulfide | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 5 | 20 | |
| Carbon Tetrachloride | 0.0592 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | 6 | 20 | |
| Chlorobenzene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Chloroethane | 0.0526 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| Chloroform | 0.0543 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 4 | 20 | |
| Chloromethane | 0.0610 | 0.0100 | mg/kg wet | 0.05000 | | 122 | 70-130 | 4 | 20 | |
| cis-1,2-Dichloroethene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 5 | 20 | |
| cis-1,3-Dichloropropene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 2 | 20 | |
| Dibromochloromethane | 0.0508 | 0.0020 | mg/kg wet | 0.05000 | | 102 | 70-130 | 0.8 | 20 | |
| Dibromomethane | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |
| Dichlorodifluoromethane | 0.0580 | 0.0100 | mg/kg wet | 0.05000 | | 116 | 70-130 | 6 | 20 | |
| Diethyl Ether | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 2 | 20 | |
| Di-isopropyl ether | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 2 | 20 | |
| Ethyl tertiary-butyl ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| Ethylbenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| Hexachlorobutadiene | 0.0578 | 0.0050 | mg/kg wet | 0.05000 | | 116 | 70-130 | 2 | 20 | |
| Isopropylbenzene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 1 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| Methyl tert-Butyl Ether | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| Methylene Chloride | 0.0534 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| Naphthalene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 1 | 20 | |
| n-Butylbenzene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| n-Propylbenzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 1 | 20 | |
| sec-Butylbenzene | 0.0415 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | 1 | 20 | |
| Styrene | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| tert-Butylbenzene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.5 | 20 | |
| Tertiary-amyl methyl ether | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Tetrachloroethene | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Tetrahydrofuran | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 2 | 20 | |
| Toluene | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| trans-1,2-Dichloroethene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| trans-1,3-Dichloropropene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| Trichloroethene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| Trichlorofluoromethane | 0.0583 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | 6 | 20 | |
| Vinyl Chloride | 0.0608 | 0.0100 | mg/kg wet | 0.05000 | | 122 | 70-130 | 5 | 20 | |
| Xylene O | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 2 | 20 | |
| Xylene P,M | 0.104 | 0.0100 | mg/kg wet | 0.1000 | | 104 | 70-130 | 2 | 20 | |
| Xylenes (Total) | 0.157 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0585* | | mg/kg wet | *0.05000* | | *117* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0535* | | mg/kg wet | *0.05000* | | *107* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0555* | | mg/kg wet | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0503* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0128* | | mg/kg wet | *0.01250* | | *103* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0141* | | mg/kg wet | *0.01250* | | *113* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00982* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0113* | | mg/kg wet | *0.01250* | | *91* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| 4,4´-DDE | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| 4,4´-DDT | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Aldrin | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Aldrin [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| alpha-BHC | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| alpha-BHC [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| alpha-Chlordane | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| beta-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| beta-BHC [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| delta-BHC | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| delta-BHC [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| Dieldrin | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | | | |
| Endosulfan I | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Endosulfan I [2C] | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| Endosulfan II | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| Endosulfan II [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| Endosulfan Sulfate | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| Endrin | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Endrin [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | | | |
| Endrin Ketone | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0097 | 0.0015 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0117 | 0.0015 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| gamma-Chlordane | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| Heptachlor | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Heptachlor [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Heptachlor Epoxide | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| Hexachlorobenzene | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | | | |
| Methoxychlor | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| Methoxychlor [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0125* | | mg/kg wet | *0.01250* | | *100* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0143* | | mg/kg wet | *0.01250* | | *114* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00990* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0116* | | mg/kg wet | *0.01250* | | *93* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 6 | 30 | |
| 4,4´-DDD [2C] | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 5 | 30 | |
| 4,4´-DDE | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 6 | 30 | |
| 4,4´-DDE [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 5 | 30 | |
| 4,4´-DDT | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 8 | 30 | |
| 4,4´-DDT [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 6 | 30 | |
| Aldrin | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 5 | 30 | |
| Aldrin [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| alpha-BHC | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 6 | 30 | |
| alpha-BHC [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 5 | 30 | |
| alpha-Chlordane | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| alpha-Chlordane [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| beta-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 0.6 | 30 | |
| beta-BHC [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 3 | 30 | |
| delta-BHC | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| delta-BHC [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| Dieldrin | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 6 | 30 | |
| Dieldrin [2C] | 0.0130 | 0.0025 | mg/kg wet | 0.01250 | | 104 | 40-140 | 5 | 30 | |
| Endosulfan I | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 5 | 30 | |
| Endosulfan I [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 5 | 30 | |
| Endosulfan II | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| Endosulfan II [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| Endosulfan Sulfate | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 9 | 30 | |
| Endosulfan Sulfate [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| Endrin | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 6 | 30 | |
| Endrin [2C] | 0.0125 | 0.0025 | mg/kg wet | 0.01250 | | 100 | 40-140 | 5 | 30 | |
| Endrin Ketone | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 8 | 30 | |
| Endrin Ketone [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 5 | 30 | |
| gamma-BHC (Lindane) | 0.0102 | 0.0015 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0122 | 0.0015 | mg/kg wet | 0.01250 | | 97 | 40-140 | 4 | 30 | |
| gamma-Chlordane | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 6 | 30 | |
| gamma-Chlordane [2C] | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 97 | 40-140 | 5 | 30 | |
| Heptachlor | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 6 | 30 | |
| Heptachlor [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 5 | 30 | |
| Heptachlor Epoxide | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 6 | 30 | |
| Heptachlor Epoxide [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| Hexachlorobenzene | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 4 | 30 | |
| Hexachlorobenzene [2C] | 0.0127 | 0.0025 | mg/kg wet | 0.01250 | | 102 | 40-140 | 3 | 30 | |
| Methoxychlor | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 9 | 30 | |
| Methoxychlor [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 7 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0132* | | mg/kg wet | *0.01250* | | *105* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0147* | | mg/kg wet | *0.01250* | | *117* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0100* | | mg/kg wet | *0.01250* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0115* | | mg/kg wet | *0.01250* | | *92* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71502 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71502 - 3540C** | | | | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0204* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0219* | | mg/kg wet | *0.02500* | | *88* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0192* | | mg/kg wet | *0.02500* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0200* | | mg/kg wet | *0.02500* | | *80* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 85 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | | | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 86 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 82 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0220* | | mg/kg wet | *0.02500* | | *88* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0227* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0200* | | mg/kg wet | *0.02500* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0205* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 82 | 40-140 | 4 | 30 | |
| Aroclor 1016 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 86 | 40-140 | 4 | 30 | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 84 | 40-140 | 3 | 30 | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 89 | 40-140 | 9 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0217* | | mg/kg wet | *0.02500* | | *87* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0228* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0192* | | mg/kg wet | *0.02500* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0195* | | mg/kg wet | *0.02500* | | *78* | *30-150* | | | |
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71801 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71801 - 3546** | | | | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.171* | | mg/kg wet | *0.2000* | | *85* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.176* | | mg/kg wet | *0.2000* | | *88* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 74 | 40-140 | | | |
| 2,4,5-T [2C] | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 74 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 80 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 78 | 40-140 | | | |
| 2,4-D | 0.130 | 0.047 | mg/kg wet | 0.1880 | | 69 | 40-140 | | | |
| 2,4-D [2C] | 0.148 | 0.047 | mg/kg wet | 0.1880 | | 79 | 40-140 | | | |
| 2,4-DB | 0.149 | 0.048 | mg/kg wet | 0.1900 | | 78 | 40-140 | | | |
| 2,4-DB [2C] | 0.146 | 0.048 | mg/kg wet | 0.1900 | | 77 | 40-140 | | | |
| Dalapon | 0.304 | 0.046 | mg/kg wet | 0.4550 | | 67 | 40-140 | | | |
| Dalapon [2C] | 0.385 | 0.046 | mg/kg wet | 0.4550 | | 85 | 40-140 | | | |
| Dicamba | 0.017 | 0.009 | mg/kg wet | 0.01880 | | 88 | 40-140 | | | |
| Dicamba [2C] | 0.016 | 0.009 | mg/kg wet | 0.01880 | | 86 | 40-140 | | | |
| Dichlorprop | 0.157 | 0.047 | mg/kg wet | 0.1880 | | 83 | 40-140 | | | |
| Dichlorprop [2C] | 0.160 | 0.047 | mg/kg wet | 0.1880 | | 85 | 40-140 | | | |
| Dinoseb | 0.011 | 0.048 | mg/kg wet | 0.09500 | | 11 | 10-100 | | | |
| Dinoseb [2C] | 0.011 | 0.048 | mg/kg wet | 0.09500 | | 12 | 10-100 | | | |
| MCPA | 17.1 | 2.32 | mg/kg wet | 18.60 | | 92 | 40-140 | | | |
| MCPA [2C] | 14.5 | 2.32 | mg/kg wet | 18.60 | | 78 | 40-140 | | | |
| MCPP | 14.4 | 2.35 | mg/kg wet | 18.80 | | 76 | 40-140 | | | |
| MCPP [2C] | 16.2 | 2.35 | mg/kg wet | 18.80 | | 86 | 40-140 | | | |
| *Surrogate: DCAA* | *0.175* | | mg/kg wet | *0.2000* | | *87* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.182* | | mg/kg wet | *0.2000* | | *91* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 88 | 40-140 | 17 | 30 | |
| 2,4,5-T [2C] | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 86 | 40-140 | 15 | 30 | |
| 2,4,5-TP (Silvex) | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 92 | 40-140 | 14 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 88 | 40-140 | 12 | 30 | |
| 2,4-D | 0.149 | 0.047 | mg/kg wet | 0.1880 | | 79 | 40-140 | 14 | 30 | |
| 2,4-D [2C] | 0.156 | 0.047 | mg/kg wet | 0.1880 | | 83 | 40-140 | 5 | 30 | |
| 2,4-DB | 0.168 | 0.048 | mg/kg wet | 0.1900 | | 88 | 40-140 | 12 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71801 - 3546** | | | | | | | | | | |
| 2,4-DB [2C] | 0.170 | 0.048 | mg/kg wet | 0.1900 | | 89 | 40-140 | 15 | 30 | |
| Dalapon | 0.345 | 0.046 | mg/kg wet | 0.4550 | | 76 | 40-140 | 13 | 30 | |
| Dalapon [2C] | 0.419 | 0.046 | mg/kg wet | 0.4550 | | 92 | 40-140 | 8 | 30 | |
| Dicamba | 0.017 | 0.009 | mg/kg wet | 0.01880 | | 90 | 40-140 | 2 | 30 | |
| Dicamba [2C] | 0.018 | 0.009 | mg/kg wet | 0.01880 | | 96 | 40-140 | 11 | 30 | |
| Dichlorprop | 0.179 | 0.047 | mg/kg wet | 0.1880 | | 95 | 40-140 | 13 | 30 | |
| Dichlorprop [2C] | 0.184 | 0.047 | mg/kg wet | 0.1880 | | 98 | 40-140 | 14 | 30 | |
| Dinoseb | 0.012 | 0.048 | mg/kg wet | 0.09500 | | 13 | 10-100 | 13 | 30 | |
| Dinoseb [2C] | 0.012 | 0.048 | mg/kg wet | 0.09500 | | 13 | 10-100 | 6 | 30 | |
| MCPA | 17.3 | 2.32 | mg/kg wet | 18.60 | | 93 | 40-140 | 1 | 30 | |
| MCPA [2C] | 16.8 | 2.32 | mg/kg wet | 18.60 | | 90 | 40-140 | 15 | 30 | |
| MCPP | 16.7 | 2.35 | mg/kg wet | 18.80 | | 89 | 40-140 | 15 | 30 | |
| MCPP [2C] | 17.1 | 2.35 | mg/kg wet | 18.80 | | 91 | 40-140 | 5 | 30 | |
| *Surrogate: DCAA* | *0.184* | | mg/kg wet | *0.2000* | | *92* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.193* | | mg/kg wet | *0.2000* | | *97* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.15* | | mg/kg wet | *3.333* | | *64* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.42* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.20* | | mg/kg wet | *5.000* | | *64* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.40* | | mg/kg wet | *3.333* | | *72* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.85* | | mg/kg wet | *5.000* | | *57* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.23* | | mg/kg wet | *3.333* | | *67* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *2.96* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.84* | | mg/kg wet | *3.333* | | *85* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| 1,4-Dichlorobenzene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 3.36 | 0.333 | mg/kg wet | 3.333 | | 101 | 30-130 | | | |
| 2,4-Dichlorophenol | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| 2,4-Dinitrophenol | 3.08 | 1.67 | mg/kg wet | 3.333 | | 92 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 2-Chloronaphthalene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 2-Chlorophenol | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 30-130 | | | |
| 2-Methylnaphthalene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| 2-Methylphenol | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 30-130 | | | |
| 2-Nitrophenol | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.67 | 0.667 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 3+4-Methylphenol | 5.19 | 0.667 | mg/kg wet | 6.667 | | 78 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 3.70 | 0.333 | mg/kg wet | 3.333 | | 111 | 40-140 | | | |
| 4-Chloroaniline | 1.68 | 0.667 | mg/kg wet | 3.333 | | 50 | 40-140 | | | |
| 4-Nitrophenol | 2.00 | 1.67 | mg/kg wet | 3.333 | | 60 | 30-130 | | | |
| Acenaphthene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Acenaphthylene | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Acetophenone | 2.55 | 0.667 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Aniline | 1.97 | 1.67 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| Anthracene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Azobenzene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Benzo(a)anthracene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Benzo(a)pyrene | 3.08 | 0.167 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.74 | 0.333 | mg/kg wet | 3.333 | | 112 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.14 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.47 | 0.333 | mg/kg wet | 3.333 | | 104 | 40-140 | | | |
| Butylbenzylphthalate | 3.25 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Chrysene | 3.17 | 0.167 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.67 | 0.167 | mg/kg wet | 3.333 | | 110 | 40-140 | | | |
| Dibenzofuran | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Diethylphthalate | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Dimethylphthalate | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Di-n-butylphthalate | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Di-n-octylphthalate | 3.29 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | | | |
| Fluoranthene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Fluorene | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Hexachlorobenzene | 3.62 | 0.333 | mg/kg wet | 3.333 | | 109 | 40-140 | | | |
| Hexachlorobutadiene | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| Hexachloroethane | 2.60 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.63 | 0.333 | mg/kg wet | 3.333 | | 109 | 40-140 | | | |
| Isophorone | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| Naphthalene | 2.75 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Nitrobenzene | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.80 | 0.333 | mg/kg wet | 3.333 | | 54 | 40-140 | | | |
| Pentachlorophenol | 3.30 | 1.67 | mg/kg wet | 3.333 | | 99 | 30-130 | | | |
| Phenanthrene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Phenol | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 30-130 | | | |
| Pyrene | 3.18 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.40* | | mg/kg wet | *3.333* | | *72* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.16* | | mg/kg wet | *5.000* | | *103* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.78* | | mg/kg wet | *5.000* | | *76* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.83* | | mg/kg wet | *3.333* | | *85* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.23* | | mg/kg wet | *5.000* | | *65* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.54* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.41* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.94* | | mg/kg wet | *3.333* | | *88* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 14 | 30 | |
| 1,2-Dichlorobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 13 | 30 | |
| 1,3-Dichlorobenzene | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 13 | 30 | |
| 1,4-Dichlorobenzene | 2.32 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 13 | 30 | |
| 2,4,5-Trichlorophenol | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | 11 | 30 | |
| 2,4,6-Trichlorophenol | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | 13 | 30 | |
| 2,4-Dichlorophenol | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 30-130 | 16 | 30 | |
| 2,4-Dimethylphenol | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | 13 | 30 | |
| 2,4-Dinitrophenol | 2.96 | 1.67 | mg/kg wet | 3.333 | | 89 | 30-130 | 4 | 30 | |
| 2,4-Dinitrotoluene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 4 | 30 | |
| 2,6-Dinitrotoluene | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 11 | 30 | |
| 2-Chloronaphthalene | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 11 | 30 | |
| 2-Chlorophenol | 2.26 | 0.333 | mg/kg wet | 3.333 | | 68 | 30-130 | 13 | 30 | |
| 2-Methylnaphthalene | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 17 | 30 | |
| 2-Methylphenol | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 30-130 | 19 | 30 | |
| 2-Nitrophenol | 2.65 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | 14 | 30 | |
| 3,3´-Dichlorobenzidine | 2.39 | 0.667 | mg/kg wet | 3.333 | | 72 | 40-140 | 11 | 30 | |
| 3+4-Methylphenol | 4.53 | 0.667 | mg/kg wet | 6.667 | | 68 | 30-130 | 14 | 30 | |
| 4-Bromophenyl-phenylether | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 18 | 30 | |
| 4-Chloroaniline | 1.60 | 0.667 | mg/kg wet | 3.333 | | 48 | 40-140 | 5 | 30 | |
| 4-Nitrophenol | 1.89 | 1.67 | mg/kg wet | 3.333 | | 57 | 30-130 | 5 | 30 | |
| Acenaphthene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 12 | 30 | |
| Acenaphthylene | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 13 | 30 | |
| Acetophenone | 2.26 | 0.667 | mg/kg wet | 3.333 | | 68 | 40-140 | 12 | 30 | |
| Aniline | 1.73 | 1.67 | mg/kg wet | 3.333 | | 52 | 40-140 | 13 | 30 | |
| Anthracene | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 11 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| Azobenzene | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 19 | 30 | |
| Benzo(a)anthracene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 11 | 30 | |
| Benzo(a)pyrene | 2.82 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | 9 | 30 | |
| Benzo(b)fluoranthene | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 5 | 30 | |
| Benzo(g,h,i)perylene | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 14 | 30 | |
| Benzo(k)fluoranthene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 10 | 30 | |
| bis(2-Chloroethoxy)methane | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 15 | 30 | |
| bis(2-Chloroethyl)ether | 2.08 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 13 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 15 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 8 | 30 | |
| Butylbenzylphthalate | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 8 | 30 | |
| Chrysene | 2.85 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | 11 | 30 | |
| Dibenzo(a,h)Anthracene | 3.23 | 0.167 | mg/kg wet | 3.333 | | 97 | 40-140 | 13 | 30 | |
| Dibenzofuran | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 12 | 30 | |
| Diethylphthalate | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 10 | 30 | |
| Dimethylphthalate | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 12 | 30 | |
| Di-n-butylphthalate | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 4 | 30 | |
| Di-n-octylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 4 | 30 | |
| Fluoranthene | 2.58 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 2 | 30 | |
| Fluorene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 11 | 30 | |
| Hexachlorobenzene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 16 | 30 | |
| Hexachlorobutadiene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 14 | 30 | |
| Hexachloroethane | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 13 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 11 | 30 | |
| Isophorone | 2.01 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | 15 | 30 | |
| Naphthalene | 2.42 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 13 | 30 | |
| Nitrobenzene | 2.24 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 7 | 30 | |
| N-Nitrosodimethylamine | 1.54 | 0.333 | mg/kg wet | 3.333 | | 46 | 40-140 | 16 | 30 | |
| Pentachlorophenol | 2.78 | 1.67 | mg/kg wet | 3.333 | | 83 | 30-130 | 17 | 30 | |
| Phenanthrene | 2.62 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 12 | 30 | |
| Phenol | 2.06 | 0.333 | mg/kg wet | 3.333 | | 62 | 30-130 | 19 | 30 | |
| Pyrene | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 13 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.21* | | mg/kg wet | *3.333* | | *66* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.73* | | mg/kg wet | *5.000* | | *95* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.47* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.64* | | mg/kg wet | *3.333* | | *79* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.97* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.35* | | mg/kg wet | *3.333* | | *71* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.17* | | mg/kg wet | *5.000* | | *63* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.87* | | mg/kg wet | *3.333* | | *86* | *30-130* | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.91* | | mg/kg wet | *3.333* | | *57* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.18* | | mg/kg wet | *5.000* | | *64* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *2.93* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.02* | | mg/kg wet | *3.333* | | *60* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.61* | | mg/kg wet | *5.000* | | *52* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.93* | | mg/kg wet | *3.333* | | *58* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *2.77* | | mg/kg wet | *5.000* | | *55* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.98* | | mg/kg wet | *3.333* | | *89* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.13 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.10 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.10 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.22 | 0.333 | mg/kg wet | 3.333 | | 66 | 30-130 | | | |
| 2,4-Dinitrophenol | 3.35 | 1.67 | mg/kg wet | 3.333 | | 101 | 30-130 | | | |
| 2,4-Dinitrotoluene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| 2-Chloronaphthalene | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | | | |
| 2-Chlorophenol | 2.02 | 0.333 | mg/kg wet | 3.333 | | 61 | 30-130 | | | |
| 2-Methylnaphthalene | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | | | |
| 2-Methylphenol | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 30-130 | | | |
| 2-Nitrophenol | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.36 | 0.667 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| 3+4-Methylphenol | 4.47 | 0.667 | mg/kg wet | 6.667 | | 67 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| 4-Chloroaniline | 1.89 | 0.667 | mg/kg wet | 3.333 | | 57 | 40-140 | | | |
| 4-Nitrophenol | 2.55 | 1.67 | mg/kg wet | 3.333 | | 77 | 30-130 | | | |
| Acenaphthene | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Acenaphthylene | 2.38 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| Acetophenone | 2.06 | 0.667 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| Aniline | 1.61 | 1.67 | mg/kg wet | 3.333 | | 48 | 40-140 | | | |
| Anthracene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| Azobenzene | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | | | |
| Benzo(a)anthracene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Benzo(a)pyrene | 2.83 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 1.82 | 0.333 | mg/kg wet | 3.333 | | 55 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 1.96 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.25 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Butylbenzylphthalate | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Chrysene | 2.89 | 0.167 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.12 | 0.167 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Dibenzofuran | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Diethylphthalate | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Dimethylphthalate | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Di-n-butylphthalate | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Di-n-octylphthalate | 3.48 | 0.333 | mg/kg wet | 3.333 | | 104 | 40-140 | | | |
| Fluoranthene | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Fluorene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Hexachlorobenzene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Hexachlorobutadiene | 2.42 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | | | |
| Hexachloroethane | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Isophorone | 1.89 | 0.333 | mg/kg wet | 3.333 | | 57 | 40-140 | | | |
| Naphthalene | 2.19 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Nitrobenzene | 1.99 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.48 | 0.333 | mg/kg wet | 3.333 | | 45 | 40-140 | | | |
| Pentachlorophenol | 3.24 | 1.67 | mg/kg wet | 3.333 | | 97 | 30-130 | | | |
| Phenanthrene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Phenol | 1.93 | 0.333 | mg/kg wet | 3.333 | | 58 | 30-130 | | | |
| Pyrene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.10* | | mg/kg wet | *3.333* | | *63* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.00* | | mg/kg wet | *5.000* | | *100* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.29* | | mg/kg wet | *5.000* | | *66* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.42* | | mg/kg wet | *3.333* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.92* | | mg/kg wet | *5.000* | | *58* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.20* | | mg/kg wet | *3.333* | | *66* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.01* | | mg/kg wet | *5.000* | | *60* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.08* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.43 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 5 | 30 | |
| 1,2-Dichlorobenzene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 5 | 30 | |
| 1,3-Dichlorobenzene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 5 | 30 | |
| 1,4-Dichlorobenzene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| 2,4,5-Trichlorophenol | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 30-130 | 2 | 30 | |
| 2,4,6-Trichlorophenol | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | 3 | 30 | |
| 2,4-Dichlorophenol | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | 6 | 30 | |
| 2,4-Dimethylphenol | 2.41 | 0.333 | mg/kg wet | 3.333 | | 72 | 30-130 | 9 | 30 | |
| 2,4-Dinitrophenol | 3.59 | 1.67 | mg/kg wet | 3.333 | | 108 | 30-130 | 7 | 30 | |
| 2,4-Dinitrotoluene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 3 | 30 | |
| 2,6-Dinitrotoluene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 2 | 30 | |
| 2-Chloronaphthalene | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 6 | 30 | |
| 2-Chlorophenol | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 30-130 | 6 | 30 | |
| 2-Methylnaphthalene | 2.43 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 6 | 30 | |
| 2-Methylphenol | 2.38 | 0.333 | mg/kg wet | 3.333 | | 72 | 30-130 | 0.3 | 30 | |
| 2-Nitrophenol | 2.51 | 0.333 | mg/kg wet | 3.333 | | 75 | 30-130 | 7 | 30 | |
| 3,3´-Dichlorobenzidine | 2.25 | 0.667 | mg/kg wet | 3.333 | | 68 | 40-140 | 5 | 30 | |
| 3+4-Methylphenol | 4.77 | 0.667 | mg/kg wet | 6.667 | | 72 | 30-130 | 7 | 30 | |
| 4-Bromophenyl-phenylether | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.6 | 30 | |
| 4-Chloroaniline | 1.92 | 0.667 | mg/kg wet | 3.333 | | 58 | 40-140 | 2 | 30 | |
| 4-Nitrophenol | 2.71 | 1.67 | mg/kg wet | 3.333 | | 81 | 30-130 | 6 | 30 | |
| Acenaphthene | 2.61 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 3 | 30 | |
| Acenaphthylene | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 3 | 30 | |
| Acetophenone | 2.19 | 0.667 | mg/kg wet | 3.333 | | 66 | 40-140 | 6 | 30 | |
| Aniline | 1.45 | 1.67 | mg/kg wet | 3.333 | | 44 | 40-140 | 10 | 30 | |
| Anthracene | 2.92 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 2 | 30 | |
| Azobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 0.8 | 30 | |
| Benzo(a)anthracene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 2 | 30 | |
| Benzo(a)pyrene | 2.87 | 0.167 | mg/kg wet | 3.333 | | 86 | 40-140 | 1 | 30 | |
| Benzo(b)fluoranthene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 5 | 30 | |
| Benzo(g,h,i)perylene | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 0.06 | 30 | |
| Benzo(k)fluoranthene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 5 | 30 | |
| bis(2-Chloroethoxy)methane | 2.17 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 5 | 30 | |
| bis(2-Chloroethyl)ether | 1.90 | 0.333 | mg/kg wet | 3.333 | | 57 | 40-140 | 4 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.05 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | 5 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.31 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 2 | 30 | |
| Butylbenzylphthalate | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 2 | 30 | |
| Chrysene | 2.97 | 0.167 | mg/kg wet | 3.333 | | 89 | 40-140 | 3 | 30 | |
| Dibenzo(a,h)Anthracene | 3.10 | 0.167 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.4 | 30 | |
| Dibenzofuran | 2.58 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 2 | 30 | |
| Diethylphthalate | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 3 | 30 | |
| Dimethylphthalate | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 1 | 30 | |
| Di-n-butylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 0.1 | 30 | |
| Di-n-octylphthalate | 3.46 | 0.333 | mg/kg wet | 3.333 | | 104 | 40-140 | 0.5 | 30 | |
| Fluoranthene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 2 | 30 | |
| Fluorene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 2 | 30 | |
| Hexachlorobenzene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 2 | 30 | |
| Hexachlorobutadiene | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | 3 | 30 | |
| Hexachloroethane | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.1 | 30 | |
| Isophorone | 1.96 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 3 | 30 | |
| Naphthalene | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 4 | 30 | |
| Nitrobenzene | 1.97 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 1 | 30 | |
| N-Nitrosodimethylamine | 1.51 | 0.333 | mg/kg wet | 3.333 | | 45 | 40-140 | 2 | 30 | |
| Pentachlorophenol | 3.50 | 1.67 | mg/kg wet | 3.333 | | 105 | 30-130 | 8 | 30 | |
| Phenanthrene | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 1 | 30 | |
| Phenol | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 30-130 | 5 | 30 | |
| Pyrene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 1 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.16* | | mg/kg wet | *3.333* | | *65* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.92* | | mg/kg wet | *5.000* | | *98* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.37* | | mg/kg wet | *5.000* | | *67* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.47* | | mg/kg wet | *3.333* | | *74* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.96* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.22* | | mg/kg wet | *3.333* | | *67* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.12* | | mg/kg wet | *5.000* | | *62* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.03* | | mg/kg wet | *3.333* | | *91* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL72151 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 100 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 11500 | 100 | mg/kg | 10000 | | 115 | 80-120 | | | |
| Total Organic Carbon (2) | 11400 | 100 | mg/kg | 10000 | | 114 | 80-120 | | | |
| Total Organic Carbon (Average) | 11400 | 100 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 9490 | 100 | mg/kg | 10000 | | 95 | 80-120 | 19 | 200 | |
| Total Organic Carbon (2) | 10500 | 100 | mg/kg | 10000 | | 105 | 80-120 | 8 | 200 | |
| Total Organic Carbon (Average) | 9970 | 100 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.50 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| XH | Peaks found in the retention time window for MCPA did not confirm by GC/MS. |
| U | Analyte included in the analysis, but not detected |
| TR | RSD of replicate analysis >25%. Reanalysis produced similar results. |
| S+ | Surrogate recovery(ies) above upper control limit (S+). |
| RRF | Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD+ | Continuing Calibration %Diff/Drift is above control limit (CD+). |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| B+ | Blank Spike recovery is above upper control limit (B+). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 7,9,10,11
    Analysis: Dioxin
    TAT: 5 day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

Added 2oz to Samples 7,9,10,11, split samples for Sub work
ec 12/20/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 190932 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 190955 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190956 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190979 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190980 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190992 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 190931 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 190953 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190954 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190977 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190978 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190991 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 190930 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 190951 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190952 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190975 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190976 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190990 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 04 | 190929 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 190949 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190950 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190973 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190974 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190989 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 05 | 190928 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 190947 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190948 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190971 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190972 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190988 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 190927 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 190945 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190946 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190969 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190970 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190987 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 190926 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 190943 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190944 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190967 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190968 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190986 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 192267 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 08 | 190925 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 190941 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190942 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190965 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190966 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190985 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 190924 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 190939 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190940 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190963 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190964 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190984 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 192266 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 10 | 190923 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 190937 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190938 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190961 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190962 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190983 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 192265 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 11 | 190922 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 11 | 190935 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190936 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190959 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190960 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190982 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 11 | 192264 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 12 | 190921 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 12 | 191059 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |

2nd Review

Are barcode labels on correct containers? (Yes) No

Completed By: [signature] Date & Time: 12/20/17 1451

Reviewed By: [signature] Date & Time: 12/22/17 1520

Delivered By: [signature] 12/20/17 1521

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No
    ESS Sample IDs: **1--11**
    Analysis: **Dioxin, Grain size, Classification, Moisture content**
    TAT: **5 day**
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 12/14/17 Time: 1820 By: [illegible]

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? ____ Date: ____ Time: ____ By: ____

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 190932 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 190955 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190956 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190979 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190980 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190992 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 190931 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 190953 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190954 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190977 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190978 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190991 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 190930 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 190951 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190952 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190975 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190976 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190990 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 04 | 190929 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 190949 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190950 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190973 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190974 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190989 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 05 | 190928 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 190947 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190948 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190971 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190972 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190988 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 190927 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 190945 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190946 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190969 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190970 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190987 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 190926 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 190943 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190944 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190967 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190968 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190986 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 190925 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 190941 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190942 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190965 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190966 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190985 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 190924 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 190939 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190940 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190963 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190964 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190984 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 190923 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 190937 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190938 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190961 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190962 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190983 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 11 | 190922 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 11 | 190935 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190936 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190959 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190960 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190982 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 12 | 190921 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 12 | 191059 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/14/17 1735

Reviewed By: _____ Date & Time: 12/14/17 1817

Delivered By: _____ 12/14/17 1817

Changes made 12/15/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712347 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 11 | 12/14/17 | 10:10 AM | Grab | Soil | Type C - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 2 | 02 12 | 12/14/17 | 10:15 AM | Grab | Soil | Type C - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 03 13 | 12/14/17 | 10:20 AM | Grab | Soil | Type C - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 4 | 04 14 | 12/14/17 | 10:25 AM | Grab | Soil | Type C - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 5 | 05 15 | 12/14/17 | 10:30 AM | Grab | Soil | Type C - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 6 | 06 16 | 12/14/17 | 10:35 AM | Grab | Soil | Type C - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | 07 17 | 12/14/17 | 10:40 AM | Grab | Soil | Type C - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 8 | 08 18 | 12/14/17 | 10:45 AM | Grab | Soil | Type B - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X |
| 9 | 09 19 | 12/14/17 | 10:50 AM | Grab | Soil | Type B - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 10 20 | 12/14/17 | 10:55 AM | Grab | Soil | Type B - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:
Seals Intact: Tim 12 3.3
Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** Please specify "Other" preservative and containers types in this space

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st. Then, proceed analytical & gradation B & C

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 12/14 | JByrne 12/14/17 12pm | JByrne 12/14/17 15:34 | 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS | | | |

Changes made 12/15/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time: 5-Day Rush
Regulatory State
Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits: S-1
Electonic Deliverables: ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 01 ~~01~~ | 12/14/17 | 11:00 AM | Grab | Soil | Type B - Capping Sand - 004 | X | X | X | X | X | X | X | X | ~~X~~ | ~~X~~ | ~~X~~ |
| 12 | 02 ~~02~~ | 12/14/17 | | Grab | Soil | TB Vials | | | | | | | | | | | |

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

**Laboratory Use Only**
Cooler Present:
Seals Intact: Tim ice 3.3
Cooler Temperature: °C

Sampled by : Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space
Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 12/14 | 12/14/17 12pm | 12/14/17 15:34 | 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Walton SPS | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712347 |
| Turn Time | 5-Day Rush |
| Reporting Limits | S-1 |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 11 | 12/14/17 | 10:10 AM | Grab | Soil | Type C - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 2 | 02 12 | 12/14/17 | 10:15 AM | Grab | Soil | Type C - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 03 13 | 12/14/17 | 10:20 AM | Grab | Soil | Type C - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 4 | 04 14 | 12/14/17 | 10:25 AM | Grab | Soil | Type C - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 5 | 05 15 | 12/14/17 | 10:30 AM | Grab | Soil | Type C - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 6 | 06 16 | 12/14/17 | 10:35 AM | Grab | Soil | Type C - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | 07 17 | 12/14/17 | 10:40 AM | Grab | Soil | Type C - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 8 | 08 18 | 12/14/17 | 10:45 AM | Grab | Soil | Type B - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X |
| 9 | 09 19 | 12/14/17 | 10:50 AM | Grab | Soil | Type B - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 10 20 | 12/14/17 | 10:55 AM | Grab | Soil | Type B - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim 12 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Gradation on A 1st. Then, proceed analytical & gradation B & C

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [illegible] 12/14 | J Byrne 12/14/17 12pm | J Byrne 12/14/17 15:34 | [illegible] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712347 |
| Turn Time | 5-Day Rush |
| Reporting Limits | S-1 |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 01 21 | 12/14/17 | 11:00 AM | Grab | Soil | Type B - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 12 | 02 22 | 12/14/17 | | Grab | Soil | TB Vials | | | | | | | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 12/14 | 12/14/17 12pm | 12/14/17 15:34 | 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Walton SPS | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1712347**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 11:26 am, Dec 29, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
Pace Analytical - Minneapolis, MN Dioxin

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

## SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**Low Level VOA vials were frozen by ESS Laboratory on December 14, 2017 at 18:20.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712347-01 | Type C - Capping Sand - 019 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-02 | Type C - Capping Sand - 020 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-03 | Type C - Capping Sand - 021 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-04 | Type C - Capping Sand - 022 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-05 | Type C - Capping Sand - 023 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-06 | Type C - Capping Sand - 024 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-07 | Type C - Capping Sand - 025 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-08 | Type B - Capping Sand - 001 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-09 | Type B - Capping Sand - 002 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-10 | Type B - Capping Sand - 003 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |
| 1712347-11 | Type B - Capping Sand - 004 | Soil | §, 6010C, 6020A, 7471B, 8081B, 8082A, 8151A, 8260B Low, 8270D, 9060 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

## PROJECT NARRATIVE

**5035/8260B Volatile Organic Compounds / Low Level**

| | |
|---|---|
| 1712347-09 | **Surrogate recovery(ies) above upper control limit (S+).** |
| | 1,2-Dichloroethane-d4 (133% @ 70-130%) |
| 1712347-10 | **Surrogate recovery(ies) above upper control limit (S+).** |
| | 1,2-Dichloroethane-d4 (134% @ 70-130%) |
| 1712347-11 | **Surrogate recovery(ies) above upper control limit (S+).** |
| | 1,2-Dichloroethane-d4 (131% @ 70-130%) |
| C7L0260-CCV1 | **Continuing Calibration %Diff/Drift is above control limit (CD+).** |
| | 1,1,1-Trichloroethane (21% @ 20%), 2,2-Dichloropropane (21% @ 20%), Bromodichloromethane (26% @ 20%) |
| C7L0260-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | Naphthalene (22% @ 20%), Tetrahydrofuran (24% @ 20%) |
| C7L0261-CCV1 | **Continuing Calibration %Diff/Drift is above control limit (CD+).** |
| | 2,2-Dichloropropane (21% @ 20%) |
| C7L0261-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | 1,4-Dioxane (23% @ 20%), Tetrahydrofuran (23% @ 20%) |
| CL71816-BS1 | **Blank Spike recovery is above upper control limit (B+).** |
| | Bromomethane (134% @ 70-130%) |

**8151A Chlorinated Herbicides**

| | |
|---|---|
| 1712347-08 | **Modified result** |
| | MCPA , MCPA [2C] |
| 1712347-08 | **Peaks found in the retention time window for MCPA did not confirm by GC/MS.** |

**8270D Semi-Volatile Organic Compounds**

| | |
|---|---|
| C7L0207-CCV1 | **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration** |
| | 2,4-Dinitrotoluene (96% @ 80-120%), 2,6-Dinitrotoluene (96% @ 80-120%) |
| C7L0207-CCV1 | **Calibration required quadratic regression (Q).** |
| | 2,4-Dinitrophenol (110% @ 80-120%), Pentachlorophenol (102% @ 80-120%) |
| C7L0207-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | N-Nitrosodimethylamine (30% @ 20%) |
| C7L0229-CCV1 | **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration** |
| | 2,4-Dinitrotoluene (100% @ 80-120%), 2,6-Dinitrotoluene (99% @ 80-120%) |
| C7L0229-CCV1 | **Calibration required quadratic regression (Q).** |
| | 2,4-Dinitrophenol (113% @ 80-120%), Pentachlorophenol (96% @ 80-120%) |
| C7L0229-CCV1 | **Continuing Calibration %Diff/Drift is below control limit (CD-).** |
| | N-Nitrosodimethylamine (32% @ 20%) |
| C7L0275-CCV1 | **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration** |
| | 2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (100% @ 80-120%) |
| C7L0275-CCV1 | **Calibration required quadratic regression (Q).** |
| | 2,4-Dinitrophenol (142% @ 80-120%), Pentachlorophenol (103% @ 80-120%) |
| C7L0275-CCV1 | **Continuing Calibration %Diff/Drift is above control limit (CD+).** |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill ESS Laboratory Work Order: 1712347

2,4-Dinitrophenol (42% @ 20%)

C7L0275-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
bis(2-Chloroethyl)ether (24% @ 20%), N-Nitrosodimethylamine (21% @ 20%), Phenol-d6 (21% @ 20%)

C7L0304-CCV1 **Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration**
2,4-Dinitrotoluene (102% @ 80-120%), 2,6-Dinitrotoluene (103% @ 80-120%)

C7L0304-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (119% @ 80-120%), Pentachlorophenol (111% @ 80-120%)

C7L0304-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Azobenzene (22% @ 20%), N-Nitrosodimethylamine (21% @ 20%)

**Classical Chemistry**

1712347-03 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-05 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

1712347-07 **RSD of replicate analysis >25%. Reanalysis produced similar results.**
Total Organic Carbon (Average)

**Total Metals**

CL71841-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Barium (21% @ 20%)

**No other observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

## MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1712347-01 through 1712347-11**

Matrices: ( ) Ground Water/Surface Water (X) Soil/Sediment ( ) Drinking Water ( ) Air ( ) Other:_____

**CAM Protocol** (check all that apply below):

| | | | | | |
|---|---|---|---|---|---|
| (X) 8260 VOC CAM II A | (X) 7470/7471 Hg CAM III B | ( ) MassDEP VPH (GC/PID/FID) CAM IV A | (X) 8082 PCB CAM V A | ( ) 9014 Total Cyanide/PAC CAM VI A | ( ) 6860 Perchlorate CAM VIII B |
| (X) 8270 SVOC CAM II B | ( ) 7010 Metals CAM III C | ( ) MassDEP VPH (GC/MS) CAM IV B | (X) 8081 Pesticides CAM V C | ( ) 7196 Hex Cr CAM VI B | ( ) MassDEP APH CAM IX A |
| (X) 6010 Metals CAM III A | (X) 6020 Metals CAM III D | ( ) MassDEP EPH CAM IV B | (X) 8151 Herbicides CAM V C | ( ) Explosives CAM VIII A | ( ) TO-15 VOC CAM IX B |

***Affirmative responses to questions A through F are required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes (X) No ( ) |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes (X) No ( ) |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes (X) No ( ) |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes (X) No ( ) |
| E | VPH, EPH, APH and TO-15 only: a. Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes ( ) No ( ) |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes ( ) No ( ) |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes (X) No ( ) |

***Responses to Questions G, H and I below are required for "'Presumptive Certainty" status***

| | | |
|---|---|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)? | Yes (X) No ( )* |
| | ***Data User Note:*** ***Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.*** | |
| H | Were **all** QC performance standards specified in the CAM protocol(s) achieved? | Yes ( ) No (X)* |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes (X) No ( )* |

****All negative responses must be addressed in an attached laboratory narrative.***

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Laurel Stoddard
Date: December 28, 2017
Printed Name: Laurel Stoddard
Position: Laboratory Director

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:37 | 2.2 | 100 | CL71841 |
| **Arsenic** | **11.0** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Barium** | **22.1** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Beryllium** | **0.47** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Chromium** | **48.8** (0.97) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Lead** | **24.9** (4.84) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| Mercury | ND (0.030) | | 7471B | | 1 | MJV | 12/19/17 13:27 | 0.71 | 40 | CL71842 |
| **Nickel** | **22.3** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:37 | 2.2 | 100 | CL71841 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Thallium** | **0.51** (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:37 | 2.2 | 100 | CL71841 |
| **Vanadium** | **15.9** (0.97) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |
| **Zinc** | **28.0** (2.42) | | 6010C | | 1 | KJK | 12/20/17 2:25 | 2.2 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0017) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0872) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Acetone | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Benzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromoform | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chloroform | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0017) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Styrene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Toluene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Xylene O | ND (0.0044) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0087) | | 8260B Low | | 1 | 12/17/17 22:35 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *126 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *99 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *118 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *95 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.7
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0216) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/15/17 23:51 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *96 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *108 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *65 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 14:51 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *89 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *72 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| 2,4-D | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| MCPA | ND (2.45) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |
| MCPP | ND (2.48) | | 8151A | | 1 | 12/19/17 23:19 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *77 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 1,2-Dichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 1,3-Dichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 1,4-Dichlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4,5-Trichlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4,6-Trichlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dichlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dimethylphenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dinitrophenol | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,4-Dinitrotoluene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2,6-Dinitrotoluene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Chloronaphthalene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Chlorophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Methylnaphthalene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Methylphenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 2-Nitrophenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 3,3′-Dichlorobenzidine | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 3+4-Methylphenol | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 4-Bromophenyl-phenylether | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 4-Chloroaniline | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| 4-Nitrophenol | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Acenaphthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Acenaphthylene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Acetophenone | ND (0.750) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Aniline | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Anthracene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Azobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(a)anthracene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(a)pyrene | ND (0.188) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(b)fluoranthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(g,h,i)perylene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Benzo(k)fluoranthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| bis(2-Chloroethyl)ether | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| bis(2-chloroisopropyl)Ether | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| bis(2-Ethylhexyl)phthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Butylbenzylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Chrysene | ND (0.188) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Dibenzo(a,h)Anthracene | ND (0.188) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Dibenzofuran | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Diethylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Dimethylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Di-n-butylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Di-n-octylphthalate | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Fluoranthene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Fluorene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Hexachlorobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Hexachlorobutadiene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Hexachloroethane | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Indeno(1,2,3-cd)Pyrene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Isophorone | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Naphthalene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Nitrobenzene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| N-Nitrosodimethylamine | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Pentachlorophenol | ND (1.88) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Phenanthrene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Phenol | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |
| Pyrene | ND (0.374) | | 8270D | | 1 | 12/19/17 22:24 | C7L0275 | CL71407 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *69 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *83 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *76 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *64 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *67 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *62 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *75 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 019
Date Sampled: 12/14/17 10:10
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (100) | | 9060 | | 1 | DEL | 12/22/17 18:00 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:42 | 2.23 | 100 | CL71841 |
| **Arsenic** | **5.93** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Barium** | **16.7** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Beryllium** | **0.44** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Chromium** | **44.1** (0.96) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Lead** | **20.4** (4.78) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/19/17 13:33 | 0.85 | 40 | CL71842 |
| **Nickel** | **22.1** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:42 | 2.23 | 100 | CL71841 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Thallium** | **0.61** (0.48) | | 6020A | | 20 | NAR | 12/19/17 15:42 | 2.23 | 100 | CL71841 |
| **Vanadium** | **16.5** (0.96) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |
| **Zinc** | **28.1** (2.39) | | 6010C | | 1 | KJK | 12/20/17 2:29 | 2.23 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0020) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Acetone | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Benzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromoform | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chloroform | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0020) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Styrene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Toluene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 5.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Xylene O | ND (0.0050) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0101) | | 8260B Low | | 1 | 12/17/17 23:00 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *127 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *118 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0221) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 1:19 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *100 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *115 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *65 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *81 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:11 | | CL71502 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *81 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *86 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| 2,4-D | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| MCPA | ND (2.45) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |
| MCPP | ND (2.48) | | 8151A | | 1 | 12/19/17 23:51 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *82 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *87 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 1,2-Dichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 1,3-Dichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 1,4-Dichlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4,5-Trichlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4,6-Trichlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dichlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dimethylphenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dinitrophenol | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,4-Dinitrotoluene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2,6-Dinitrotoluene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Chloronaphthalene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Chlorophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Methylnaphthalene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Methylphenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 2-Nitrophenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 3,3′-Dichlorobenzidine | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 3+4-Methylphenol | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 4-Bromophenyl-phenylether | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 4-Chloroaniline | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| 4-Nitrophenol | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Acenaphthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Acenaphthylene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Acetophenone | ND (0.746) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Aniline | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Anthracene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Azobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(a)anthracene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(a)pyrene | ND (0.187) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(b)fluoranthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(g,h,i)perylene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Benzo(k)fluoranthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| bis(2-Chloroethyl)ether | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| bis(2-chloroisopropyl)Ether | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| bis(2-Ethylhexyl)phthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Butylbenzylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Chrysene | ND (0.187) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Dibenzo(a,h)Anthracene | ND (0.187) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Dibenzofuran | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Diethylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Dimethylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Di-n-butylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Di-n-octylphthalate | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Fluoranthene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Fluorene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Hexachlorobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Hexachlorobutadiene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Hexachloroethane | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Indeno(1,2,3-cd)Pyrene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Isophorone | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Naphthalene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Nitrobenzene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| N-Nitrosodimethylamine | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Pentachlorophenol | ND (1.87) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Phenanthrene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Phenol | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |
| Pyrene | ND (0.372) | | 8270D | | 1 | 12/19/17 22:59 | C7L0275 | CL71407 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *67 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *81 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *69 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *72 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 9:30

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *62 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *61 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *75 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 020
Date Sampled: 12/14/17 10:15
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Total Organic Carbon (Average) | ND (100) | | 9060 | | 1 | DEL | 12/22/17 1:47 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.51) | | 6020A | | 20 | NAR | 12/19/17 15:48 | 2.1 | 100 | CL71841 |
| **Arsenic** | **9.90** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Barium** | **27.5** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Beryllium** | **0.48** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| Cadmium | ND (0.51) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Chromium** | **54.2** (1.02) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Lead** | **23.9** (5.11) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| Mercury | ND (0.033) | | 7471B | | 1 | MJV | 12/19/17 13:35 | 0.65 | 40 | CL71842 |
| **Nickel** | **24.3** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| Selenium | ND (0.51) | | 6020A | | 20 | NAR | 12/19/17 15:48 | 2.1 | 100 | CL71841 |
| Silver | ND (0.51) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Thallium** | **0.51** (0.51) | | 6020A | | 20 | NAR | 12/19/17 15:48 | 2.1 | 100 | CL71841 |
| **Vanadium** | **16.6** (1.02) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |
| **Zinc** | **27.1** (2.55) | | 6010C | | 1 | KJK | 12/20/17 2:36 | 2.1 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0894) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Acetone | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Benzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromoform | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chloroform | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Styrene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Toluene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Xylene O | ND (0.0045) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0089) | | 8260B Low | | 1 | 12/17/17 23:25 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Aldrin | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0219) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endrin | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0027) | | 8081B | | 1 | 12/16/17 1:49 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:30 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *88 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *91 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *68 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| MCPA | ND (2.44) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |
| MCPP | ND (2.47) | | 8151A | | 1 | 12/20/17 0:23 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *93 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *102 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Acetophenone | ND (0.735) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Aniline | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Anthracene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Azobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.184) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Chrysene | ND (0.184) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.184) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Fluorene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Isophorone | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Naphthalene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.84) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Phenol | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |
| Pyrene | ND (0.367) | | 8270D | | 1 | 12/19/17 23:33 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *71 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *86 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *73 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *82 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *70 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *63 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *74 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 021
Date Sampled: 12/14/17 10:20
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **TR 5400** (100) | | 9060 | | 1 | DEL | 12/22/17 18:50 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.50) | | 6020A | | 20 | NAR | 12/19/17 15:54 | 2.18 | 100 | CL71841 |
| **Arsenic** | **15.6** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Barium** | **22.0** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Beryllium** | **0.48** (0.11) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Cadmium | ND (0.50) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Chromium** | **47.5** (0.99) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Lead** | **24.2** (4.95) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Mercury | ND (0.032) | | 7471B | | 1 | MJV | 12/19/17 13:37 | 0.66 | 40 | CL71842 |
| **Nickel** | **25.4** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Selenium | ND (0.50) | | 6020A | | 20 | NAR | 12/19/17 15:54 | 2.18 | 100 | CL71841 |
| Silver | ND (0.50) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| Thallium | ND (0.50) | | 6020A | | 20 | NAR | 12/19/17 15:54 | 2.18 | 100 | CL71841 |
| **Vanadium** | **14.9** (0.99) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |
| **Zinc** | **28.0** (2.48) | | 6010C | | 1 | KJK | 12/20/17 2:45 | 2.18 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Acetone | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Benzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromoform | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chloroform | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Styrene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Toluene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 5.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Xylene O | ND (0.0053) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0106) | | 8260B Low | | 1 | 12/17/17 23:51 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0220) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 2:18 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *93 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *106 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *62 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *76 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 15:55 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *86 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *83 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *57 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| 2,4-D | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| MCPA | ND (2.46) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |
| MCPP | ND (2.49) | | 8151A | | 1 | 12/20/17 0:56 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *89 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *101 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Acetophenone | ND (0.755) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Aniline | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Anthracene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Azobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.189) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Chrysene | ND (0.189) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.189) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Fluorene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Isophorone | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Naphthalene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.89) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Phenol | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |
| Pyrene | ND (0.377) | | 8270D | | 1 | 12/20/17 0:07 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *67 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *84 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *75 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *62 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *62 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *72 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 022
Date Sampled: 12/14/17 10:25
Percent Solids: 93

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **777** (100) | | 9060 | | 1 | DEL | 12/22/17 2:54 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.54) | | 6020A | | 20 | NAR | 12/19/17 16:00 | 2.05 | 100 | CL71841 |
| **Arsenic** | **12.8** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Barium** | **26.5** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Beryllium** | **0.49** (0.12) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Cadmium | ND (0.54) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Chromium** | **52.7** (1.08) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Lead** | **26.4** (5.41) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Mercury | ND (0.034) | | 7471B | | 1 | MJV | 12/19/17 13:39 | 0.65 | 40 | CL71842 |
| **Nickel** | **23.2** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Selenium | ND (0.54) | | 6020A | | 20 | NAR | 12/19/17 16:00 | 2.05 | 100 | CL71841 |
| Silver | ND (0.54) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| Thallium | ND (0.54) | | 6020A | | 20 | NAR | 12/19/17 16:00 | 2.05 | 100 | CL71841 |
| **Vanadium** | **16.7** (1.08) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |
| **Zinc** | **28.6** (2.70) | | 6010C | | 1 | KJK | 12/20/17 2:49 | 2.05 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0018) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0909) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Acetone | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Benzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromoform | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chloroform | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0018) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Styrene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Toluene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 6.1
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Xylene O | ND (0.0045) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0091) | | 8260B Low | | 1 | 12/18/17 0:16 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *125 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *93 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *119 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Aldrin | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0231) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endrin | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0029) | | 8081B | | 1 | 12/16/17 2:47 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *107 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *64 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 19
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:12 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *93 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *93 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *80 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *64 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| 2,4-D | ND (0.051) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.052) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dalapon | ND (0.049) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dicamba [2C] | ND (0.010) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.051) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| Dinoseb | ND (0.052) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| MCPA | ND (2.53) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |
| MCPP | ND (2.56) | | 8151A | | 1 | 12/20/17 1:28 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *78 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *82 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Acetophenone | ND (0.787) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Aniline | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Anthracene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Azobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.197) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Chrysene | ND (0.197) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.197) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Fluorene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Isophorone | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Naphthalene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.97) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Phenol | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |
| Pyrene | ND (0.393) | | 8270D | | 1 | 12/20/17 0:41 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *62 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *74 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *63 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *69 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90
Initial Volume: 14.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *57 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *61 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *55 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *66 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 023
Date Sampled: 12/14/17 10:30
Percent Solids: 90

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **TR 4100** (100) | | 9060 | | 1 | DEL | 12/22/17 19:07 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:18 | 2.27 | 100 | CL71841 |
| **Arsenic** | **10.4** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Barium** | **20.3** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Beryllium** | **0.46** (0.10) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Chromium** | **50.9** (0.94) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Lead** | **22.8** (4.70) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/19/17 13:41 | 0.84 | 40 | CL71842 |
| **Nickel** | **22.6** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:18 | 2.27 | 100 | CL71841 |
| Silver | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Thallium** | **0.60** (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:18 | 2.27 | 100 | CL71841 |
| **Vanadium** | **17.5** (0.94) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |
| **Zinc** | **29.6** (2.35) | | 6010C | | 1 | KJK | 12/20/17 2:53 | 2.27 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0021) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Acetone | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Benzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromoform | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chloroform | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0021) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Styrene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Toluene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 5.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Xylene O | ND (0.0051) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0103) | | 8260B Low | | 1 | 12/18/17 0:41 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *130 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *94 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *121 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0221) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:17 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *104 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *117 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *70 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *85 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 16:31 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *90 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *66 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.050) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dalapon | ND (0.048) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| Dinoseb | ND (0.050) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| MCPA | ND (2.43) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |
| MCPP | ND (2.46) | | 8151A | | 1 | 12/20/17 5:10 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *76 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *75 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Acetophenone | ND (0.742) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Aniline | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Anthracene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Azobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.186) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Chrysene | ND (0.186) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.186) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Fluorene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Isophorone | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Naphthalene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.86) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Phenol | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |
| Pyrene | ND (0.370) | | 8270D | | 1 | 12/20/17 1:15 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *61 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *78 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *62 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *69 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *56 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *59 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *54 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *71 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 024
Date Sampled: 12/14/17 10:35
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **778** (100) | | 9060 | | 1 | DEL | 12/22/17 3:27 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:23 | 2.4 | 100 | CL71841 |
| **Arsenic** | **8.49** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Barium** | **20.7** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Beryllium** | **0.48** (0.10) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| Cadmium | ND (0.44) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Chromium** | **47.7** (0.89) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Lead** | **22.6** (4.44) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| Mercury | ND (0.027) | | 7471B | | 1 | MJV | 12/19/17 13:43 | 0.78 | 40 | CL71842 |
| **Nickel** | **21.4** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| Selenium | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:23 | 2.4 | 100 | CL71841 |
| Silver | ND (0.44) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Thallium** | **0.54** (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:23 | 2.4 | 100 | CL71841 |
| **Vanadium** | **16.6** (0.89) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |
| **Zinc** | **30.3** (2.22) | | 6010C | | 1 | KJK | 12/20/17 2:57 | 2.4 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1,1-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1,2,2-Tetrachloroethane | ND (0.0019) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1,2-Trichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,1-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,3-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,3-Trichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,4-Trichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2,4-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dibromoethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dichloroethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,3,5-Trimethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,3-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,3-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,4-Dichlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 1,4-Dioxane | ND (0.0951) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2,2-Dichloropropane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2-Butanone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 2-Hexanone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 4-Chlorotoluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 4-Isopropyltoluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| 4-Methyl-2-Pentanone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Acetone | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Benzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromochloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromoform | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Bromomethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Carbon Disulfide | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Carbon Tetrachloride | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chlorobenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chloroethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chloroform | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Chloromethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| cis-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| cis-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Dibromochloromethane | ND (0.0019) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Dibromomethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Dichlorodifluoromethane | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Diethyl Ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Di-isopropyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Ethyl tertiary-butyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Ethylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Hexachlorobutadiene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Isopropylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Methyl tert-Butyl Ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Methylene Chloride | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Naphthalene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| n-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| n-Propylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| sec-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Styrene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| tert-Butylbenzene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Tertiary-amyl methyl ether | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Tetrachloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Tetrahydrofuran | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Toluene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 5.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| trans-1,3-Dichloropropene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Trichloroethene | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Trichlorofluoromethane | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Vinyl Chloride | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Xylene O | ND (0.0048) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Xylene P,M | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | C7L0260 | CL71815 |
| Xylenes (Total) | ND (0.0095) | | 8260B Low | | 1 | 12/18/17 1:07 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *130 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *121 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *97 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Aldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0221) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endrin | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0017) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0028) | | 8081B | | 1 | 12/16/17 3:46 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *89 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *100 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *49 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *57 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1221 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1232 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1242 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1248 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1254 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1260 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1262 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |
| Aroclor 1268 | ND (0.06) | | 8082A | | 1 | 12/18/17 18:47 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *95 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *68 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| 2,4-D | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dalapon | ND (0.047) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| Dinoseb | ND (0.049) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| MCPA | ND (2.40) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |
| MCPP | ND (2.43) | | 8151A | | 1 | 12/20/17 5:42 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *92 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *98 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Acetophenone | ND (0.735) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Aniline | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Anthracene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Azobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.184) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Chrysene | ND (0.184) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.184) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Fluorene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Isophorone | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Naphthalene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.84) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Phenol | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |
| Pyrene | ND (0.367) | | 8270D | | 1 | 12/20/17 1:49 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *57 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *73 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *57 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *63 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94
Initial Volume: 14.5
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *52 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *54 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *50 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *71 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand - 025
Date Sampled: 12/14/17 10:40
Percent Solids: 94

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **TR 2710** (100) | | 9060 | | 1 | DEL | 12/22/17 19:56 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:29 | 2.17 | 100 | CL71841 |
| Arsenic | ND (2.36) | | 6010C | | 1 | KJK | 12/20/17 14:31 | 2.17 | 100 | CL71841 |
| **Barium** | **16.2** (2.36) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| **Beryllium** | **0.32** (0.10) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Cadmium | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| **Chromium** | **16.7** (0.95) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Lead | ND (4.73) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Mercury | ND (0.033) | | 7471B | | 1 | MJV | 12/19/17 13:45 | 0.62 | 40 | CL71842 |
| **Nickel** | **16.8** (2.36) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Selenium | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:29 | 2.17 | 100 | CL71841 |
| Silver | ND (0.47) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| Thallium | ND (0.47) | | 6020A | | 20 | NAR | 12/19/17 16:29 | 2.17 | 100 | CL71841 |
| **Vanadium** | **56.0** (0.95) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |
| **Zinc** | **32.1** (2.36) | | 6010C | | 1 | KJK | 12/20/17 3:01 | 2.17 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0016) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0814) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Acetone | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Benzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromoform | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chloroform | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0016) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Styrene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Toluene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 6.3
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Xylene O | ND (0.0041) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0081) | | 8260B Low | | 1 | 12/18/17 16:00 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *128 %* | | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *120 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0210) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0016) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:15 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *99 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *112 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *66 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *79 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:06 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *82 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *86 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *71 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *74 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| MCPA | # ND (2.34) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |
| MCPP | ND (2.36) | | 8151A | | 1 | 12/20/17 6:14 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *79 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *109 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dichlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dimethylphenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dinitrophenol | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Chloronaphthalene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Chlorophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Methylnaphthalene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Methylphenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 2-Nitrophenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 3+4-Methylphenol | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 4-Chloroaniline | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| 4-Nitrophenol | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Acenaphthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Acenaphthylene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Acetophenone | ND (0.684) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Aniline | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Anthracene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Azobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(a)anthracene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(a)pyrene | ND (0.171) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(b)fluoranthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Benzo(k)fluoranthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Butylbenzylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Chrysene | ND (0.171) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.171) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Dibenzofuran | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Diethylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Dimethylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Di-n-butylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Di-n-octylphthalate | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Fluoranthene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Fluorene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Hexachlorobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Hexachlorobutadiene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Hexachloroethane | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Isophorone | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Naphthalene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Nitrobenzene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| N-Nitrosodimethylamine | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Pentachlorophenol | ND (1.71) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Phenanthrene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Phenol | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |
| Pyrene | ND (0.342) | | 8270D | | 1 | 12/20/17 2:23 | C7L0275 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *71 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *80 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *70 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *76 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97
Initial Volume: 15
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *63 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *66 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *60 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *79 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 001
Date Sampled: 12/14/17 10:45
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **2500** (100) | | 9060 | | 1 | DEL | 12/22/17 4:00 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.46) | | 6020A | | 20 | NAR | 12/19/17 16:35 | 2.24 | 100 | CL71841 |
| Arsenic | ND (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Barium** | **16.2** (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Beryllium** | **0.33** (0.10) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Cadmium | ND (0.46) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Chromium** | **17.6** (0.92) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Lead | ND (4.58) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Mercury | ND (0.032) | | 7471B | | 1 | MJV | 12/19/17 13:47 | 0.64 | 40 | CL71842 |
| **Nickel** | **17.9** (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Selenium | ND (0.46) | | 6020A | | 20 | NAR | 12/19/17 16:35 | 2.24 | 100 | CL71841 |
| Silver | ND (0.46) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| Thallium | ND (0.46) | | 6020A | | 20 | NAR | 12/19/17 16:35 | 2.24 | 100 | CL71841 |
| **Vanadium** | **58.9** (0.92) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |
| **Zinc** | **33.4** (2.29) | | 6010C | | 1 | KJK | 12/20/17 3:40 | 2.24 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0014) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0713) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Acetone | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Benzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromoform | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chloroform | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0014) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Styrene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Toluene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 7.2
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Xylene O | ND (0.0036) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0071) | | 8260B Low | | 1 | 12/18/17 16:25 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *133 %* | *S+* | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *98 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *121 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *95 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0205) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 4:45 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *105 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *38 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *44 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:26 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *94 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *74 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *78 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| MCPA | ND (2.36) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |
| MCPP | ND (2.39) | | 8151A | | 1 | 12/20/17 6:46 | C7L0277 | CL71801 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: DCAA* | *79 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dichlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dimethylphenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dinitrophenol | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Chloronaphthalene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Chlorophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Methylnaphthalene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Methylphenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 2-Nitrophenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 3+4-Methylphenol | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 4-Chloroaniline | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| 4-Nitrophenol | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Acenaphthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Acenaphthylene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Acetophenone | ND (0.680) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Aniline | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Anthracene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Azobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(a)anthracene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(a)pyrene | ND (0.170) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(b)fluoranthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Benzo(k)fluoranthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Butylbenzylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Chrysene | ND (0.170) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.170) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Dibenzofuran | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Diethylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Dimethylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Di-n-butylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Di-n-octylphthalate | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Fluoranthene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Fluorene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Hexachlorobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Hexachlorobutadiene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Hexachloroethane | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Isophorone | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Naphthalene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Nitrobenzene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| N-Nitrosodimethylamine | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Pentachlorophenol | ND (1.70) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Phenanthrene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Phenol | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |
| Pyrene | ND (0.340) | | 8270D | | 1 | 12/20/17 16:31 | C7L0304 | CL71507 |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *74 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *84 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *75 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *79 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97
Initial Volume: 15.1
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *67 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *71 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *66 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *77 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 002
Date Sampled: 12/14/17 10:50
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **4230** (100) | | 9060 | | 1 | DEL | 12/22/17 20:13 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 16:41 | 2.15 | 100 | CL71841 |
| **Arsenic** | **2.52** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Barium** | **17.4** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Beryllium** | **0.36** (0.11) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Cadmium | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Chromium** | **22.7** (0.96) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Lead | ND (4.78) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Mercury | ND (0.025) | | 7471B | | 1 | MJV | 12/19/17 13:49 | 0.8 | 40 | CL71842 |
| **Nickel** | **20.0** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Selenium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 16:41 | 2.15 | 100 | CL71841 |
| Silver | ND (0.48) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| Thallium | ND (0.48) | | 6020A | | 20 | NAR | 12/19/17 16:41 | 2.15 | 100 | CL71841 |
| **Vanadium** | **56.0** (0.96) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |
| **Zinc** | **33.6** (2.39) | | 6010C | | 1 | KJK | 12/20/17 3:44 | 2.15 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0767) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Acetone | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Benzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromoform | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chloroform | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Styrene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Toluene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 6.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Xylene O | ND (0.0038) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0077) | | 8260B Low | | 1 | 12/18/17 16:51 | | [CALC] |

| | %Recovery | Qualifier | Limits |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *134 %* | *S+* | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *97 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *123 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 20.3
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Aldrin | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0203) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endrin | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Hexachlorobenzene | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0025) | | 8081B | | 1 | 12/16/17 5:14 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *100 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *115 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *67 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 19:45 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *92 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *99 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *78 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *80 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| 2,4-D | ND (0.047) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dicamba | ND (0.009) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.047) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| MCPA | ND (2.34) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |
| MCPP | ND (2.37) | | 8151A | | 1 | 12/20/17 7:18 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *84 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *95 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dichlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dimethylphenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dinitrophenol | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Chloronaphthalene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Chlorophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Methylnaphthalene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Methylphenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 2-Nitrophenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 3+4-Methylphenol | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 4-Chloroaniline | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| 4-Nitrophenol | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Acenaphthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Acenaphthylene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Acetophenone | ND (0.659) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Aniline | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Anthracene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Azobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(a)anthracene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(a)pyrene | ND (0.165) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(b)fluoranthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Benzo(k)fluoranthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Butylbenzylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Chrysene | ND (0.165) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.165) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Dibenzofuran | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Diethylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Dimethylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Di-n-butylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Di-n-octylphthalate | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Fluoranthene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Fluorene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Hexachlorobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Hexachlorobutadiene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Hexachloroethane | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Isophorone | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Naphthalene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Nitrobenzene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| N-Nitrosodimethylamine | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Pentachlorophenol | ND (1.65) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Phenanthrene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Phenol | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |
| Pyrene | ND (0.329) | | 8270D | | 1 | 12/20/17 17:05 | C7L0304 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *65 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *71 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *64 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *68 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97
Initial Volume: 15.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *57 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *61 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *56 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *76 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 003
Date Sampled: 12/14/17 10:55
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **3150** (100) | | 9060 | | 1 | DEL | 12/22/17 21:03 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: %

## Dioxins

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Dioxin** | **See Attached** (N/A) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

## Total Metals

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | I/V | F/V | Batch |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:47 | 2.35 | 100 | CL71841 |
| Arsenic | ND (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Barium** | **18.1** (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Beryllium** | **0.30** (0.10) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Cadmium | ND (0.44) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Chromium** | **19.2** (0.88) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Lead | ND (4.38) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Mercury | ND (0.033) | | 7471B | | 1 | MJV | 12/19/17 13:51 | 0.61 | 40 | CL71842 |
| **Nickel** | **18.8** (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Selenium | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:47 | 2.35 | 100 | CL71841 |
| Silver | ND (0.88) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| Thallium | ND (0.44) | | 6020A | | 20 | NAR | 12/19/17 16:47 | 2.35 | 100 | CL71841 |
| **Vanadium** | **49.6** (0.88) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |
| **Zinc** | **34.2** (2.19) | | 6010C | | 1 | KJK | 12/20/17 3:48 | 2.35 | 100 | CL71841 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1,1-Trichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1,2,2-Tetrachloroethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1,2-Trichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1-Dichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1-Dichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,1-Dichloropropene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,3-Trichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,3-Trichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,4-Trichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2,4-Trimethylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dibromo-3-Chloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dibromoethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dichloroethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,2-Dichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,3,5-Trimethylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,3-Dichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,3-Dichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,4-Dichlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 1,4-Dioxane | ND (0.0746) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2,2-Dichloropropane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2-Butanone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2-Chlorotoluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 2-Hexanone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 4-Chlorotoluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 4-Isopropyltoluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| 4-Methyl-2-Pentanone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Acetone | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Benzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromochloromethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Bromodichloromethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromoform | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Bromomethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Carbon Disulfide | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Carbon Tetrachloride | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chlorobenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chloroethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chloroform | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Chloromethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| cis-1,2-Dichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| cis-1,3-Dichloropropene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Dibromochloromethane | ND (0.0015) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Dibromomethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Dichlorodifluoromethane | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Diethyl Ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Di-isopropyl ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Ethyl tertiary-butyl ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Ethylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Hexachlorobutadiene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Isopropylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Methyl tert-Butyl Ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Methylene Chloride | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Naphthalene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| n-Butylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| n-Propylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| sec-Butylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Styrene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| tert-Butylbenzene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Tertiary-amyl methyl ether | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Tetrachloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Tetrahydrofuran | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Toluene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 6.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

## 5035/8260B Volatile Organic Compounds / Low Level

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| trans-1,2-Dichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| trans-1,3-Dichloropropene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Trichloroethene | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Trichlorofluoromethane | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Vinyl Chloride | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Xylene O | ND (0.0037) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Xylene P,M | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | C7L0261 | CL71816 |
| Xylenes (Total) | ND (0.0075) | | 8260B Low | | 1 | 12/18/17 17:16 | | [CALC] |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichloroethane-d4* | *131 %* | *S+* | *70-130* |
| *Surrogate: 4-Bromofluorobenzene* | *95 %* | | *70-130* |
| *Surrogate: Dibromofluoromethane* | *122 %* | | *70-130* |
| *Surrogate: Toluene-d8* | *96 %* | | *70-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: NXL
Prepared: 12/15/17 15:47

## 8081B Organochlorine Pesticides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 4,4´-DDD | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| 4,4´-DDE | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| 4,4´-DDT | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Aldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| alpha-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| alpha-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| beta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Chlordane (Total) | ND (0.0206) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| delta-BHC | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Dieldrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endosulfan I | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endosulfan II | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endosulfan Sulfate | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endrin | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Endrin Ketone | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| gamma-BHC (Lindane) | ND (0.0015) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| gamma-Chlordane | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Heptachlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Heptachlor Epoxide | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Hexachlorobenzene [2C] | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |
| Methoxychlor | ND (0.0026) | | 8081B | | 1 | 12/16/17 5:43 | C7L0248 | CL71508 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *106 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *119 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *76 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *91 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 20.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 12/15/17 17:05

## 8082A Polychlorinated Biphenyls (PCB)

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1221 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1232 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1242 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1248 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1254 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1260 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1262 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |
| Aroclor 1268 | ND (0.05) | | 8082A | | 1 | 12/18/17 20:04 | | CL71502 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *90 %* | | *30-150* |
| *Surrogate: Decachlorobiphenyl [2C]* | *94 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene* | *77 %* | | *30-150* |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *79 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 12/18/17 7:00

## 8151A Chlorinated Herbicides

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 2,4,5-T | ND (0.010) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| 2,4,5-TP (Silvex) | ND (0.010) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| 2,4-D | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| 2,4-DB | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dalapon | ND (0.046) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dicamba | ND (0.010) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dichlorprop | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| Dinoseb | ND (0.048) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| MCPA | ND (2.37) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |
| MCPP | ND (2.39) | | 8151A | | 1 | 12/20/17 7:50 | C7L0277 | CL71801 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: DCAA* | *81 %* | | *30-150* |
| *Surrogate: DCAA [2C]* | *90 %* | | *30-150* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 1,2-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 1,3-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 1,4-Dichlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4,5-Trichlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4,6-Trichlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dichlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dimethylphenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dinitrophenol | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,4-Dinitrotoluene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2,6-Dinitrotoluene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Chloronaphthalene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Chlorophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Methylnaphthalene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Methylphenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 2-Nitrophenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 3,3′-Dichlorobenzidine | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 3+4-Methylphenol | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 4-Bromophenyl-phenylether | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 4-Chloroaniline | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| 4-Nitrophenol | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Acenaphthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Acenaphthylene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Acetophenone | ND (0.705) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Aniline | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Anthracene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Azobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(a)anthracene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(a)pyrene | ND (0.177) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(b)fluoranthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(g,h,i)perylene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Benzo(k)fluoranthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| bis(2-Chloroethoxy)methane | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| bis(2-Chloroethyl)ether | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| bis(2-chloroisopropyl)Ether | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| bis(2-Ethylhexyl)phthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Butylbenzylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Chrysene | ND (0.177) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Dibenzo(a,h)Anthracene | ND (0.177) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Dibenzofuran | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Diethylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Dimethylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Di-n-butylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Di-n-octylphthalate | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Fluoranthene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Fluorene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Hexachlorobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Hexachlorobutadiene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Hexachloroethane | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Indeno(1,2,3-cd)Pyrene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Isophorone | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Naphthalene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Nitrobenzene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| N-Nitrosodimethylamine | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Pentachlorophenol | ND (1.77) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Phenanthrene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Phenol | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |
| Pyrene | ND (0.352) | | 8270D | | 1 | 12/20/17 17:39 | C7L0304 | CL71507 |

| | *%Recovery* | *Qualifier* | *Limits* |
|---|---|---|---|
| *Surrogate: 1,2-Dichlorobenzene-d4* | *72 %* | | *30-130* |
| *Surrogate: 2,4,6-Tribromophenol* | *79 %* | | *30-130* |
| *Surrogate: 2-Chlorophenol-d4* | *73 %* | | *30-130* |
| *Surrogate: 2-Fluorobiphenyl* | *77 %* | | *30-130* |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97
Initial Volume: 14.6
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 12/15/17 10:51

## 8270D Semi-Volatile Organic Compounds

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyzed | Sequence | Batch |
|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorophenol* | | *65 %* | | *30-130* | | | | |
| *Surrogate: Nitrobenzene-d5* | | *66 %* | | *30-130* | | | | |
| *Surrogate: Phenol-d6* | | *64 %* | | *30-130* | | | | |
| *Surrogate: p-Terphenyl-d14* | | *79 %* | | *30-130* | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand - 004
Date Sampled: 12/14/17 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1712347
ESS Laboratory Sample ID: 1712347-11
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Total Organic Carbon (Average)** | **3310** (100) | | 9060 | | 1 | DEL | 12/22/17 5:23 | mg/kg dry wt | [CALC] |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Metals | | | | | | |
| **Batch CL71841 - 3050B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Antimony | ND | 0.50 | mg/kg wet | | | | | | | |
| Arsenic | ND | 2.50 | mg/kg wet | | | | | | | |
| Barium | ND | 2.50 | mg/kg wet | | | | | | | |
| Beryllium | ND | 0.11 | mg/kg wet | | | | | | | |
| Cadmium | ND | 0.50 | mg/kg wet | | | | | | | |
| Chromium | ND | 1.00 | mg/kg wet | | | | | | | |
| Lead | ND | 5.00 | mg/kg wet | | | | | | | |
| Nickel | ND | 2.50 | mg/kg wet | | | | | | | |
| Selenium | ND | 0.50 | mg/kg wet | | | | | | | |
| Silver | ND | 0.50 | mg/kg wet | | | | | | | |
| Thallium | ND | 0.50 | mg/kg wet | | | | | | | |
| Vanadium | ND | 1.00 | mg/kg wet | | | | | | | |
| Zinc | ND | 2.50 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Antimony | 58.6 | 4.72 | mg/kg wet | 48.00 | | 122 | 0-238 | | | |
| Arsenic | 115 | 9.43 | mg/kg wet | 123.0 | | 93 | 80-120 | | | |
| Barium | 280 | 9.43 | mg/kg wet | 253.0 | | 111 | 80-120 | | | |
| Beryllium | 176 | 0.42 | mg/kg wet | 192.0 | | 92 | 80-120 | | | |
| Cadmium | 198 | 1.89 | mg/kg wet | 224.0 | | 88 | 80-120 | | | |
| Chromium | 174 | 3.77 | mg/kg wet | 179.0 | | 97 | 80-120 | | | |
| Lead | 146 | 18.9 | mg/kg wet | 145.0 | | 101 | 80-120 | | | |
| Nickel | 140 | 9.43 | mg/kg wet | 143.0 | | 98 | 80-120 | | | |
| Selenium | 43.9 | 4.72 | mg/kg wet | 42.40 | | 104 | 80-120 | | | |
| Silver | 80.9 | 1.89 | mg/kg wet | 81.60 | | 99 | 80-120 | | | |
| Thallium | 50.7 | 4.72 | mg/kg wet | 52.00 | | 98 | 80-120 | | | |
| Vanadium | 67.1 | 3.77 | mg/kg wet | 72.30 | | 93 | 80-120 | | | |
| Zinc | 710 | 9.43 | mg/kg wet | 770.0 | | 92 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Antimony | 65.3 | 4.81 | mg/kg wet | 48.00 | | 136 | 0-238 | 11 | 30 | |
| Arsenic | 117 | 9.62 | mg/kg wet | 123.0 | | 95 | 80-120 | 2 | 20 | |
| Barium | 227 | 9.62 | mg/kg wet | 253.0 | | 90 | 80-120 | 21 | 20 | D+ |
| Beryllium | 180 | 0.42 | mg/kg wet | 192.0 | | 94 | 80-120 | 2 | 20 | |
| Cadmium | 207 | 1.92 | mg/kg wet | 224.0 | | 92 | 80-120 | 4 | 20 | |
| Chromium | 184 | 3.85 | mg/kg wet | 179.0 | | 103 | 80-120 | 5 | 20 | |
| Lead | 149 | 19.2 | mg/kg wet | 145.0 | | 102 | 80-120 | 1 | 20 | |
| Nickel | 144 | 9.62 | mg/kg wet | 143.0 | | 101 | 80-120 | 2 | 20 | |
| Selenium | 47.6 | 4.81 | mg/kg wet | 42.40 | | 112 | 80-120 | 8 | 30 | |
| Silver | 84.1 | 1.92 | mg/kg wet | 81.60 | | 103 | 80-120 | 4 | 20 | |
| Thallium | 56.3 | 4.81 | mg/kg wet | 52.00 | | 108 | 80-120 | 10 | 30 | |
| Vanadium | 70.6 | 3.85 | mg/kg wet | 72.30 | | 98 | 80-120 | 5 | 20 | |
| Zinc | 747 | 9.62 | mg/kg wet | 770.0 | | 97 | 80-120 | 5 | 20 | |
| **Reference** | | | | | | | | | | |
| Lead | 4270 | 17.9 | mg/kg wet | 4490 | | 95 | 83-113 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Total Metals** | | | | | | | | | | |
| **Batch CL71842 - 7471B** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Mercury | ND | 0.033 | mg/kg wet | | | | | | | |
| **LCS** | | | | | | | | | | |
| Mercury | 15.5 | 1.90 | mg/kg wet | 17.80 | | 87 | 80-120 | | | |
| **LCS Dup** | | | | | | | | | | |
| Mercury | 18.7 | 1.46 | mg/kg wet | 17.80 | | 105 | 80-120 | 19 | 20 | |
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0602* | | mg/kg wet | *0.05000* | | *120* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0467* | | mg/kg wet | *0.05000* | | *93* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0573* | | mg/kg wet | *0.05000* | | *115* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0489* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0511 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.0431 | 0.0020 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0452 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0447 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0503 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0448 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 1,4-Dioxane | 0.783 | 0.100 | mg/kg wet | 1.000 | | 78 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0496 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| 2-Butanone | 0.225 | 0.0100 | mg/kg wet | 0.2500 | | 90 | 70-130 | | | |
| 2-Chlorotoluene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| 2-Hexanone | 0.187 | 0.0100 | mg/kg wet | 0.2500 | | 75 | 70-130 | | | |
| 4-Chlorotoluene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.194 | 0.0100 | mg/kg wet | 0.2500 | | 77 | 70-130 | | | |
| Acetone | 0.225 | 0.0100 | mg/kg wet | 0.2500 | | 90 | 70-130 | | | |
| Benzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Bromobenzene | 0.0443 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Bromochloromethane | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Bromodichloromethane | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Bromoform | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Bromomethane | 0.0522 | 0.0100 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Carbon Disulfide | 0.0451 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |
| Carbon Tetrachloride | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Chlorobenzene | 0.0435 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Chloroethane | 0.0441 | 0.0100 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Chloroform | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | | | |
| Chloromethane | 0.0525 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Dibromochloromethane | 0.0440 | 0.0020 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Dibromomethane | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0488 | 0.0100 | mg/kg wet | 0.05000 | | 98 | 70-130 | | | |
| Diethyl Ether | 0.0449 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| Di-isopropyl ether | 0.0417 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0432 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Ethylbenzene | 0.0428 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Hexachlorobutadiene | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Isopropylbenzene | 0.0414 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0441 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Methylene Chloride | 0.0456 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | | | |
| Naphthalene | 0.0368 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | | | |
| n-Butylbenzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| n-Propylbenzene | 0.0440 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| sec-Butylbenzene | 0.0356 | 0.0050 | mg/kg wet | 0.05000 | | 71 | 70-130 | | | |
| Styrene | 0.0384 | 0.0050 | mg/kg wet | 0.05000 | | 77 | 70-130 | | | |
| tert-Butylbenzene | 0.0438 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | | | |
| Tetrachloroethene | 0.0408 | 0.0050 | mg/kg wet | 0.05000 | | 82 | 70-130 | | | |
| Tetrahydrofuran | 0.0348 | 0.0050 | mg/kg wet | 0.05000 | | 70 | 70-130 | | | |
| Toluene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0418 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | | | |
| Trichloroethene | 0.0442 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | | | |
| Trichlorofluoromethane | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Vinyl Chloride | 0.0512 | 0.0100 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Xylene O | 0.0444 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| Xylene P,M | 0.0857 | 0.0100 | mg/kg wet | 0.1000 | | 86 | 70-130 | | | |
| Xylenes (Total) | 0.130 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0575* | | mg/kg wet | *0.05000* | | *115* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0517* | | mg/kg wet | *0.05000* | | *103* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0553* | | mg/kg wet | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0492* | | mg/kg wet | *0.05000* | | *98* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0479 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 4 | 20 | |
| 1,1,1-Trichloroethane | 0.0535 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0464 | 0.0020 | mg/kg wet | 0.05000 | | 93 | 70-130 | 7 | 20 | |
| 1,1,2-Trichloroethane | 0.0468 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethane | 0.0455 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 7 | 20 | |
| 1,1-Dichloropropene | 0.0489 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 5 | 20 | |
| 1,2,3-Trichlorobenzene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 5 | 20 | |
| 1,2,3-Trichloropropane | 0.0494 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 6 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 4 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0482 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 6 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| 1,2-Dibromoethane | 0.0466 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 5 | 20 | |
| 1,2-Dichlorobenzene | 0.0475 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 6 | 20 | |
| 1,2-Dichloroethane | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| 1,2-Dichloropropane | 0.0459 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0480 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 7 | 20 | |
| 1,3-Dichlorobenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| 1,3-Dichloropropane | 0.0478 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 3 | 20 | |
| 1,4-Dichlorobenzene | 0.0464 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 5 | 20 | |
| 1,4-Dioxane | 0.838 | 0.100 | mg/kg wet | 1.000 | | 84 | 70-130 | 7 | 20 | |
| 2,2-Dichloropropane | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 5 | 20 | |
| 2-Butanone | 0.233 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | 4 | 20 | |
| 2-Chlorotoluene | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 8 | 20 | |
| 2-Hexanone | 0.193 | 0.0100 | mg/kg wet | 0.2500 | | 77 | 70-130 | 3 | 20 | |
| 4-Chlorotoluene | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 5 | 20 | |
| 4-Isopropyltoluene | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 6 | 20 | |
| 4-Methyl-2-Pentanone | 0.201 | 0.0100 | mg/kg wet | 0.2500 | | 80 | 70-130 | 4 | 20 | |
| Acetone | 0.235 | 0.0100 | mg/kg wet | 0.2500 | | 94 | 70-130 | 4 | 20 | |
| Benzene | 0.0456 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| Bromobenzene | 0.0481 | 0.0050 | mg/kg wet | 0.05000 | | 96 | 70-130 | 8 | 20 | |
| Bromochloromethane | 0.0463 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 3 | 20 | |
| Bromodichloromethane | 0.0548 | 0.0050 | mg/kg wet | 0.05000 | | 110 | 70-130 | 4 | 20 | |
| Bromoform | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| Bromomethane | 0.0576 | 0.0100 | mg/kg wet | 0.05000 | | 115 | 70-130 | 10 | 20 | |
| Carbon Disulfide | 0.0469 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 4 | 20 | |
| Carbon Tetrachloride | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |
| Chlorobenzene | 0.0453 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| Chloroethane | 0.0456 | 0.0100 | mg/kg wet | 0.05000 | | 91 | 70-130 | 3 | 20 | |
| Chloroform | 0.0486 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | 3 | 20 | |
| Chloromethane | 0.0537 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 2 | 20 | |
| cis-1,2-Dichloroethene | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| cis-1,3-Dichloropropene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| Dibromochloromethane | 0.0458 | 0.0020 | mg/kg wet | 0.05000 | | 92 | 70-130 | 4 | 20 | |
| Dibromomethane | 0.0467 | 0.0050 | mg/kg wet | 0.05000 | | 93 | 70-130 | 3 | 20 | |
| Dichlorodifluoromethane | 0.0500 | 0.0100 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Diethyl Ether | 0.0473 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 5 | 20 | |
| Di-isopropyl ether | 0.0439 | 0.0050 | mg/kg wet | 0.05000 | | 88 | 70-130 | 5 | 20 | |
| Ethyl tertiary-butyl ether | 0.0460 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 6 | 20 | |
| Ethylbenzene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 5 | 20 | |
| Hexachlorobutadiene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 7 | 20 | |
| Isopropylbenzene | 0.0450 | 0.0050 | mg/kg wet | 0.05000 | | 90 | 70-130 | 8 | 20 | |
| Methyl tert-Butyl Ether | 0.0471 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 6 | 20 | |
| Methylene Chloride | 0.0472 | 0.0100 | mg/kg wet | 0.05000 | | 94 | 70-130 | 3 | 20 | |
| Naphthalene | 0.0392 | 0.0050 | mg/kg wet | 0.05000 | | 78 | 70-130 | 6 | 20 | |
| n-Butylbenzene | 0.0461 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 5 | 20 | |
| n-Propylbenzene | 0.0470 | 0.0050 | mg/kg wet | 0.05000 | | 94 | 70-130 | 7 | 20 | |
| sec-Butylbenzene | 0.0378 | 0.0050 | mg/kg wet | 0.05000 | | 76 | 70-130 | 6 | 20 | |
| Styrene | 0.0401 | 0.0050 | mg/kg wet | 0.05000 | | 80 | 70-130 | 4 | 20 | |
| tert-Butylbenzene | 0.0474 | 0.0050 | mg/kg wet | 0.05000 | | 95 | 70-130 | 8 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71815 - 5035** | | | | | | | | | | |
| Tertiary-amyl methyl ether | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 6 | 20 | |
| Tetrachloroethene | 0.0429 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | 5 | 20 | |
| Tetrahydrofuran | 0.0369 | 0.0050 | mg/kg wet | 0.05000 | | 74 | 70-130 | 6 | 20 | |
| Toluene | 0.0454 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 4 | 20 | |
| trans-1,2-Dichloroethene | 0.0445 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | 6 | 20 | |
| trans-1,3-Dichloropropene | 0.0462 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 6 | 20 | |
| Trichloroethene | 0.0458 | 0.0050 | mg/kg wet | 0.05000 | | 92 | 70-130 | 3 | 20 | |
| Trichlorofluoromethane | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 4 | 20 | |
| Vinyl Chloride | 0.0524 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | 2 | 20 | |
| Xylene O | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 3 | 20 | |
| Xylene P,M | 0.0893 | 0.0100 | mg/kg wet | 0.1000 | | 89 | 70-130 | 4 | 20 | |
| Xylenes (Total) | 0.135 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0559* | | mg/kg wet | *0.05000* | | *112* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0505* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0544* | | mg/kg wet | *0.05000* | | *109* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0495* | | mg/kg wet | *0.05000* | | *99* | *70-130* | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-Chloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 1,4-Dioxane | ND | 0.100 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Butanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 2-Hexanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | ND | 0.0050 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| 4-Methyl-2-Pentanone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Acetone | ND | 0.0100 | mg/kg wet | | | | | | | |
| Benzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromochloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromodichloromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromoform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Bromomethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Carbon Disulfide | ND | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chlorobenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloroethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Chloroform | ND | 0.0050 | mg/kg wet | | | | | | | |
| Chloromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dibromochloromethane | ND | 0.0020 | mg/kg wet | | | | | | | |
| Dibromomethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | ND | 0.0100 | mg/kg wet | | | | | | | |
| Diethyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Di-isopropyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethyl tertiary-butyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Ethylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Isopropylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methyl tert-Butyl Ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Methylene Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| n-Propylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Styrene | ND | 0.0050 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tertiary-amyl methyl ether | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrachloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Tetrahydrofuran | ND | 0.0050 | mg/kg wet | | | | | | | |
| Toluene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichloroethene | ND | 0.0050 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | ND | 0.0050 | mg/kg wet | | | | | | | |
| Vinyl Chloride | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylene O | ND | 0.0050 | mg/kg wet | | | | | | | |
| Xylene P,M | ND | 0.0100 | mg/kg wet | | | | | | | |
| Xylenes (Total) | ND | 0.0100 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0597* | | mg/kg wet | *0.05000* | | *119* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0568* | | mg/kg wet | *0.05000* | | *114* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0481* | | mg/kg wet | *0.05000* | | *96* | *70-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1,1-Trichloroethane | 0.0650 | 0.0050 | mg/kg wet | 0.05000 | | 130 | 70-130 | | | |
| 1,1,2,2-Tetrachloroethane | 0.0510 | 0.0020 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,1,2-Trichloroethane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,1-Dichloroethane | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,1-Dichloroethene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,1-Dichloropropene | 0.0592 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| 1,2,3-Trichlorobenzene | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| 1,2,3-Trichloropropane | 0.0547 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | | | |
| 1,2,4-Trichlorobenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,2,4-Trimethylbenzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,2-Dibromo-3-Chloropropane | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dibromoethane | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| 1,2-Dichlorobenzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,2-Dichloroethane | 0.0603 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | | | |
| 1,2-Dichloropropane | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 1,3,5-Trimethylbenzene | 0.0534 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| 1,3-Dichlorobenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 1,3-Dichloropropane | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dichlorobenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 1,4-Dioxane | 0.950 | 0.100 | mg/kg wet | 1.000 | | 95 | 70-130 | | | |
| 2,2-Dichloropropane | 0.0631 | 0.0050 | mg/kg wet | 0.05000 | | 126 | 70-130 | | | |
| 2-Butanone | 0.275 | 0.0100 | mg/kg wet | 0.2500 | | 110 | 70-130 | | | |
| 2-Chlorotoluene | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| 2-Hexanone | 0.222 | 0.0100 | mg/kg wet | 0.2500 | | 89 | 70-130 | | | |
| 4-Chlorotoluene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| 4-Isopropyltoluene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| 4-Methyl-2-Pentanone | 0.240 | 0.0100 | mg/kg wet | 0.2500 | | 96 | 70-130 | | | |
| Acetone | 0.279 | 0.0100 | mg/kg wet | 0.2500 | | 112 | 70-130 | | | |
| Benzene | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Bromobenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Bromochloromethane | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Bromodichloromethane | 0.0635 | 0.0050 | mg/kg wet | 0.05000 | | 127 | 70-130 | | | |
| Bromoform | 0.0567 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| Bromomethane | 0.0670 | 0.0100 | mg/kg wet | 0.05000 | | 134 | 70-130 | | | B+ |
| Carbon Disulfide | 0.0567 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | | | |
| Carbon Tetrachloride | 0.0628 | 0.0050 | mg/kg wet | 0.05000 | | 126 | 70-130 | | | |
| Chlorobenzene | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Chloroethane | 0.0541 | 0.0100 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| Chloroform | 0.0568 | 0.0050 | mg/kg wet | 0.05000 | | 114 | 70-130 | | | |
| Chloromethane | 0.0637 | 0.0100 | mg/kg wet | 0.05000 | | 127 | 70-130 | | | |
| cis-1,2-Dichloroethene | 0.0531 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| cis-1,3-Dichloropropene | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Dibromochloromethane | 0.0504 | 0.0020 | mg/kg wet | 0.05000 | | 101 | 70-130 | | | |
| Dibromomethane | 0.0539 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Dichlorodifluoromethane | 0.0615 | 0.0100 | mg/kg wet | 0.05000 | | 123 | 70-130 | | | |
| Diethyl Ether | 0.0537 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | | | |
| Di-isopropyl ether | 0.0497 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | | | |
| Ethyl tertiary-butyl ether | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Ethylbenzene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Hexachlorobutadiene | 0.0590 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | | | |
| Isopropylbenzene | 0.0499 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | | | |
| Methyl tert-Butyl Ether | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| Methylene Chloride | 0.0554 | 0.0100 | mg/kg wet | 0.05000 | | 111 | 70-130 | | | |
| Naphthalene | 0.0432 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| n-Butylbenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| n-Propylbenzene | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| sec-Butylbenzene | 0.0421 | 0.0050 | mg/kg wet | 0.05000 | | 84 | 70-130 | | | |
| Styrene | 0.0446 | 0.0050 | mg/kg wet | 0.05000 | | 89 | 70-130 | | | |
| tert-Butylbenzene | 0.0526 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Tertiary-amyl methyl ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | | | |
| Tetrachloroethene | 0.0487 | 0.0050 | mg/kg wet | 0.05000 | | 97 | 70-130 | | | |
| Tetrahydrofuran | 0.0432 | 0.0050 | mg/kg wet | 0.05000 | | 86 | 70-130 | | | |
| Toluene | 0.0532 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | | | |
| trans-1,2-Dichloroethene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | | | |
| trans-1,3-Dichloropropene | 0.0527 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | | | |
| Trichloroethene | 0.0539 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | | | |
| Trichlorofluoromethane | 0.0618 | 0.0050 | mg/kg wet | 0.05000 | | 124 | 70-130 | | | |
| Vinyl Chloride | 0.0640 | 0.0100 | mg/kg wet | 0.05000 | | 128 | 70-130 | | | |
| Xylene O | 0.0521 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | | | |
| Xylene P,M | 0.102 | 0.0100 | mg/kg wet | 0.1000 | | 102 | 70-130 | | | |
| Xylenes (Total) | 0.154 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0593* | | mg/kg wet | *0.05000* | | *119* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0511* | | mg/kg wet | *0.05000* | | *102* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0561* | | mg/kg wet | *0.05000* | | *112* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0477* | | mg/kg wet | *0.05000* | | *95* | *70-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | 0.0538 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 1 | 20 | |
| 1,1,1-Trichloroethane | 0.0611 | 0.0050 | mg/kg wet | 0.05000 | | 122 | 70-130 | 6 | 20 | |
| 1,1,2,2-Tetrachloroethane | 0.0496 | 0.0020 | mg/kg wet | 0.05000 | | 99 | 70-130 | 3 | 20 | |
| 1,1,2-Trichloroethane | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethane | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| 1,1-Dichloroethene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| 1,1-Dichloropropene | 0.0566 | 0.0050 | mg/kg wet | 0.05000 | | 113 | 70-130 | 4 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 5035/8260B Volatile Organic Compounds / Low Level | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.0533 | 0.0050 | mg/kg wet | 0.05000 | | 107 | 70-130 | 1 | 20 | |
| 1,2,3-Trichloropropane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 1 | 20 | |
| 1,2,4-Trichlorobenzene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.4 | 20 | |
| 1,2,4-Trimethylbenzene | 0.0529 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 2 | 20 | |
| 1,2-Dibromo-3-Chloropropane | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| 1,2-Dibromoethane | 0.0525 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| 1,2-Dichlorobenzene | 0.0516 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| 1,2-Dichloroethane | 0.0577 | 0.0050 | mg/kg wet | 0.05000 | | 115 | 70-130 | 4 | 20 | |
| 1,2-Dichloropropane | 0.0506 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 3 | 20 | |
| 1,3,5-Trimethylbenzene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 2 | 20 | |
| 1,3-Dichlorobenzene | 0.0520 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 0.2 | 20 | |
| 1,3-Dichloropropane | 0.0541 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 2 | 20 | |
| 1,4-Dichlorobenzene | 0.0502 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 5 | 20 | |
| 1,4-Dioxane | 0.947 | 0.100 | mg/kg wet | 1.000 | | 95 | 70-130 | 0.4 | 20 | |
| 2,2-Dichloropropane | 0.0603 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | 5 | 20 | |
| 2-Butanone | 0.263 | 0.0100 | mg/kg wet | 0.2500 | | 105 | 70-130 | 4 | 20 | |
| 2-Chlorotoluene | 0.0510 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| 2-Hexanone | 0.227 | 0.0100 | mg/kg wet | 0.2500 | | 91 | 70-130 | 2 | 20 | |
| 4-Chlorotoluene | 0.0523 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 2 | 20 | |
| 4-Isopropyltoluene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| 4-Methyl-2-Pentanone | 0.232 | 0.0100 | mg/kg wet | 0.2500 | | 93 | 70-130 | 3 | 20 | |
| Acetone | 0.271 | 0.0100 | mg/kg wet | 0.2500 | | 108 | 70-130 | 3 | 20 | |
| Benzene | 0.0517 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 4 | 20 | |
| Bromobenzene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Bromochloromethane | 0.0509 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| Bromodichloromethane | 0.0603 | 0.0050 | mg/kg wet | 0.05000 | | 121 | 70-130 | 5 | 20 | |
| Bromoform | 0.0583 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | 3 | 20 | |
| Bromomethane | 0.0598 | 0.0100 | mg/kg wet | 0.05000 | | 120 | 70-130 | 11 | 20 | |
| Carbon Disulfide | 0.0540 | 0.0050 | mg/kg wet | 0.05000 | | 108 | 70-130 | 5 | 20 | |
| Carbon Tetrachloride | 0.0592 | 0.0050 | mg/kg wet | 0.05000 | | 118 | 70-130 | 6 | 20 | |
| Chlorobenzene | 0.0514 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 1 | 20 | |
| Chloroethane | 0.0526 | 0.0100 | mg/kg wet | 0.05000 | | 105 | 70-130 | 3 | 20 | |
| Chloroform | 0.0543 | 0.0050 | mg/kg wet | 0.05000 | | 109 | 70-130 | 4 | 20 | |
| Chloromethane | 0.0610 | 0.0100 | mg/kg wet | 0.05000 | | 122 | 70-130 | 4 | 20 | |
| cis-1,2-Dichloroethene | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 5 | 20 | |
| cis-1,3-Dichloropropene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 2 | 20 | |
| Dibromochloromethane | 0.0508 | 0.0020 | mg/kg wet | 0.05000 | | 102 | 70-130 | 0.8 | 20 | |
| Dibromomethane | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 4 | 20 | |
| Dichlorodifluoromethane | 0.0580 | 0.0100 | mg/kg wet | 0.05000 | | 116 | 70-130 | 6 | 20 | |
| Diethyl Ether | 0.0528 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 2 | 20 | |
| Di-isopropyl ether | 0.0488 | 0.0050 | mg/kg wet | 0.05000 | | 98 | 70-130 | 2 | 20 | |
| Ethyl tertiary-butyl ether | 0.0508 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 2 | 20 | |
| Ethylbenzene | 0.0519 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| Hexachlorobutadiene | 0.0578 | 0.0050 | mg/kg wet | 0.05000 | | 116 | 70-130 | 2 | 20 | |
| Isopropylbenzene | 0.0493 | 0.0050 | mg/kg wet | 0.05000 | | 99 | 70-130 | 1 | 20 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **5035/8260B Volatile Organic Compounds / Low Level** | | | | | | | | | | |
| **Batch CL71816 - 5035** | | | | | | | | | | |
| Methyl tert-Butyl Ether | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| Methylene Chloride | 0.0534 | 0.0100 | mg/kg wet | 0.05000 | | 107 | 70-130 | 4 | 20 | |
| Naphthalene | 0.0437 | 0.0050 | mg/kg wet | 0.05000 | | 87 | 70-130 | 1 | 20 | |
| n-Butylbenzene | 0.0518 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 2 | 20 | |
| n-Propylbenzene | 0.0522 | 0.0050 | mg/kg wet | 0.05000 | | 104 | 70-130 | 1 | 20 | |
| sec-Butylbenzene | 0.0415 | 0.0050 | mg/kg wet | 0.05000 | | 83 | 70-130 | 1 | 20 | |
| Styrene | 0.0457 | 0.0050 | mg/kg wet | 0.05000 | | 91 | 70-130 | 2 | 20 | |
| tert-Butylbenzene | 0.0524 | 0.0050 | mg/kg wet | 0.05000 | | 105 | 70-130 | 0.5 | 20 | |
| Tertiary-amyl methyl ether | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Tetrachloroethene | 0.0498 | 0.0050 | mg/kg wet | 0.05000 | | 100 | 70-130 | 2 | 20 | |
| Tetrahydrofuran | 0.0425 | 0.0050 | mg/kg wet | 0.05000 | | 85 | 70-130 | 2 | 20 | |
| Toluene | 0.0512 | 0.0050 | mg/kg wet | 0.05000 | | 102 | 70-130 | 4 | 20 | |
| trans-1,2-Dichloroethene | 0.0504 | 0.0050 | mg/kg wet | 0.05000 | | 101 | 70-130 | 2 | 20 | |
| trans-1,3-Dichloropropene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 3 | 20 | |
| Trichloroethene | 0.0513 | 0.0050 | mg/kg wet | 0.05000 | | 103 | 70-130 | 5 | 20 | |
| Trichlorofluoromethane | 0.0583 | 0.0050 | mg/kg wet | 0.05000 | | 117 | 70-130 | 6 | 20 | |
| Vinyl Chloride | 0.0608 | 0.0100 | mg/kg wet | 0.05000 | | 122 | 70-130 | 5 | 20 | |
| Xylene O | 0.0530 | 0.0050 | mg/kg wet | 0.05000 | | 106 | 70-130 | 2 | 20 | |
| Xylene P,M | 0.104 | 0.0100 | mg/kg wet | 0.1000 | | 104 | 70-130 | 2 | 20 | |
| Xylenes (Total) | 0.157 | 0.0100 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichloroethane-d4* | *0.0585* | | mg/kg wet | *0.05000* | | *117* | *70-130* | | | |
| *Surrogate: 4-Bromofluorobenzene* | *0.0535* | | mg/kg wet | *0.05000* | | *107* | *70-130* | | | |
| *Surrogate: Dibromofluoromethane* | *0.0555* | | mg/kg wet | *0.05000* | | *111* | *70-130* | | | |
| *Surrogate: Toluene-d8* | *0.0503* | | mg/kg wet | *0.05000* | | *101* | *70-130* | | | |
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 4,4´-DDD | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDD [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDE [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT | ND | 0.0025 | mg/kg wet | | | | | | | |
| 4,4´-DDT [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Aldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| alpha-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| beta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC | ND | 0.0025 | mg/kg wet | | | | | | | |
| delta-BHC [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Dieldrin | ND | 0.0025 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| Dieldrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan I [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan II [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endosulfan Sulfate [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone | ND | 0.0025 | mg/kg wet | | | | | | | |
| Endrin Ketone [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-BHC (Lindane) [2C] | ND | 0.0015 | mg/kg wet | | | | | | | |
| gamma-Chlordane | ND | 0.0025 | mg/kg wet | | | | | | | |
| gamma-Chlordane [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide | ND | 0.0025 | mg/kg wet | | | | | | | |
| Heptachlor Epoxide [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.0025 | mg/kg wet | | | | | | | |
| Hexachlorobenzene [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor | ND | 0.0025 | mg/kg wet | | | | | | | |
| Methoxychlor [2C] | ND | 0.0025 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0128* | | mg/kg wet | *0.01250* | | *103* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0141* | | mg/kg wet | *0.01250* | | *113* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00982* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0113* | | mg/kg wet | *0.01250* | | *91* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 4,4´-DDD | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| 4,4´-DDD [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| 4,4´-DDE | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| 4,4´-DDE [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| 4,4´-DDT | 0.0092 | 0.0025 | mg/kg wet | 0.01250 | | 74 | 40-140 | | | |
| 4,4´-DDT [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | | | |
| Aldrin | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Aldrin [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| alpha-BHC | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| alpha-BHC [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| alpha-Chlordane | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| alpha-Chlordane [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| beta-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | | | |
| beta-BHC [2C] | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | | | |
| delta-BHC | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | | | |
| delta-BHC [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| Dieldrin | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | | | |
| Dieldrin [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | | | |
| Endosulfan I | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | | | |
| Endosulfan I [2C] | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| Endosulfan II | 0.0096 | 0.0025 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| Endosulfan II [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 90 | 40-140 | | | |
| Endosulfan Sulfate | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| Endosulfan Sulfate [2C] | 0.0113 | 0.0025 | mg/kg wet | 0.01250 | | 91 | 40-140 | | | |
| Endrin | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Endrin [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | | | |
| Endrin Ketone | 0.0101 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Endrin Ketone [2C] | 0.0118 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| gamma-BHC (Lindane) | 0.0097 | 0.0015 | mg/kg wet | 0.01250 | | 77 | 40-140 | | | |
| gamma-BHC (Lindane) [2C] | 0.0117 | 0.0015 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| gamma-Chlordane | 0.0097 | 0.0025 | mg/kg wet | 0.01250 | | 78 | 40-140 | | | |
| gamma-Chlordane [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | | | |
| Heptachlor | 0.0095 | 0.0025 | mg/kg wet | 0.01250 | | 76 | 40-140 | | | |
| Heptachlor [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| Heptachlor Epoxide | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 81 | 40-140 | | | |
| Heptachlor Epoxide [2C] | 0.0120 | 0.0025 | mg/kg wet | 0.01250 | | 96 | 40-140 | | | |
| Hexachlorobenzene | 0.0117 | 0.0025 | mg/kg wet | 0.01250 | | 94 | 40-140 | | | |
| Hexachlorobenzene [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | | | |
| Methoxychlor | 0.0090 | 0.0025 | mg/kg wet | 0.01250 | | 72 | 40-140 | | | |
| Methoxychlor [2C] | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0125* | | mg/kg wet | *0.01250* | | *100* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0143* | | mg/kg wet | *0.01250* | | *114* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.00990* | | mg/kg wet | *0.01250* | | *79* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0116* | | mg/kg wet | *0.01250* | | *93* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 4,4´-DDD | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 6 | 30 | |
| 4,4´-DDD [2C] | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 5 | 30 | |
| 4,4´-DDE | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 6 | 30 | |
| 4,4´-DDE [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 5 | 30 | |
| 4,4´-DDT | 0.0099 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 8 | 30 | |
| 4,4´-DDT [2C] | 0.0116 | 0.0025 | mg/kg wet | 0.01250 | | 93 | 40-140 | 6 | 30 | |
| Aldrin | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 5 | 30 | |
| Aldrin [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| alpha-BHC | 0.0104 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 6 | 30 | |
| alpha-BHC [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 5 | 30 | |
| alpha-Chlordane | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| alpha-Chlordane [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| beta-BHC | 0.0091 | 0.0025 | mg/kg wet | 0.01250 | | 73 | 40-140 | 0.6 | 30 | |
| beta-BHC [2C] | 0.0111 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 3 | 30 | |
| delta-BHC | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8081B Organochlorine Pesticides** | | | | | | | | | | |
| **Batch CL71508 - 3546** | | | | | | | | | | |
| delta-BHC [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| Dieldrin | 0.0112 | 0.0025 | mg/kg wet | 0.01250 | | 89 | 40-140 | 6 | 30 | |
| Dieldrin [2C] | 0.0130 | 0.0025 | mg/kg wet | 0.01250 | | 104 | 40-140 | 5 | 30 | |
| Endosulfan I | 0.0105 | 0.0025 | mg/kg wet | 0.01250 | | 84 | 40-140 | 5 | 30 | |
| Endosulfan I [2C] | 0.0123 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 5 | 30 | |
| Endosulfan II | 0.0102 | 0.0025 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| Endosulfan II [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| Endosulfan Sulfate | 0.0106 | 0.0025 | mg/kg wet | 0.01250 | | 85 | 40-140 | 9 | 30 | |
| Endosulfan Sulfate [2C] | 0.0119 | 0.0025 | mg/kg wet | 0.01250 | | 95 | 40-140 | 5 | 30 | |
| Endrin | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 6 | 30 | |
| Endrin [2C] | 0.0125 | 0.0025 | mg/kg wet | 0.01250 | | 100 | 40-140 | 5 | 30 | |
| Endrin Ketone | 0.0110 | 0.0025 | mg/kg wet | 0.01250 | | 88 | 40-140 | 8 | 30 | |
| Endrin Ketone [2C] | 0.0124 | 0.0025 | mg/kg wet | 0.01250 | | 99 | 40-140 | 5 | 30 | |
| gamma-BHC (Lindane) | 0.0102 | 0.0015 | mg/kg wet | 0.01250 | | 82 | 40-140 | 6 | 30 | |
| gamma-BHC (Lindane) [2C] | 0.0122 | 0.0015 | mg/kg wet | 0.01250 | | 97 | 40-140 | 4 | 30 | |
| gamma-Chlordane | 0.0103 | 0.0025 | mg/kg wet | 0.01250 | | 83 | 40-140 | 6 | 30 | |
| gamma-Chlordane [2C] | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 97 | 40-140 | 5 | 30 | |
| Heptachlor | 0.0100 | 0.0025 | mg/kg wet | 0.01250 | | 80 | 40-140 | 6 | 30 | |
| Heptachlor [2C] | 0.0107 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 5 | 30 | |
| Heptachlor Epoxide | 0.0108 | 0.0025 | mg/kg wet | 0.01250 | | 86 | 40-140 | 6 | 30 | |
| Heptachlor Epoxide [2C] | 0.0126 | 0.0025 | mg/kg wet | 0.01250 | | 101 | 40-140 | 5 | 30 | |
| Hexachlorobenzene | 0.0122 | 0.0025 | mg/kg wet | 0.01250 | | 98 | 40-140 | 4 | 30 | |
| Hexachlorobenzene [2C] | 0.0127 | 0.0025 | mg/kg wet | 0.01250 | | 102 | 40-140 | 3 | 30 | |
| Methoxychlor | 0.0098 | 0.0025 | mg/kg wet | 0.01250 | | 79 | 40-140 | 9 | 30 | |
| Methoxychlor [2C] | 0.0109 | 0.0025 | mg/kg wet | 0.01250 | | 87 | 40-140 | 7 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0132* | | mg/kg wet | *0.01250* | | *105* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0147* | | mg/kg wet | *0.01250* | | *117* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0100* | | mg/kg wet | *0.01250* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0115* | | mg/kg wet | *0.01250* | | *92* | *30-150* | | | |
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71502 - 3540C** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Aroclor 1016 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1016 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1221 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1232 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1242 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1248 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1254 | ND | 0.05 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8082A Polychlorinated Biphenyls (PCB)** | | | | | | | | | | |
| **Batch CL71502 - 3540C** | | | | | | | | | | |
| Aroclor 1254 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1260 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1262 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 | ND | 0.05 | mg/kg wet | | | | | | | |
| Aroclor 1268 [2C] | ND | 0.05 | mg/kg wet | | | | | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0204* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0219* | | mg/kg wet | *0.02500* | | *88* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0192* | | mg/kg wet | *0.02500* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0200* | | mg/kg wet | *0.02500* | | *80* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| Aroclor 1016 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 85 | 40-140 | | | |
| Aroclor 1016 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 90 | 40-140 | | | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 86 | 40-140 | | | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 82 | 40-140 | | | |
| *Surrogate: Decachlorobiphenyl* | *0.0220* | | mg/kg wet | *0.02500* | | *88* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0227* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0200* | | mg/kg wet | *0.02500* | | *80* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0205* | | mg/kg wet | *0.02500* | | *82* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| Aroclor 1016 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 82 | 40-140 | 4 | 30 | |
| Aroclor 1016 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 86 | 40-140 | 4 | 30 | |
| Aroclor 1260 | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 84 | 40-140 | 3 | 30 | |
| Aroclor 1260 [2C] | 0.4 | 0.05 | mg/kg wet | 0.5000 | | 89 | 40-140 | 9 | 30 | |
| *Surrogate: Decachlorobiphenyl* | *0.0217* | | mg/kg wet | *0.02500* | | *87* | *30-150* | | | |
| *Surrogate: Decachlorobiphenyl [2C]* | *0.0228* | | mg/kg wet | *0.02500* | | *91* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene* | *0.0192* | | mg/kg wet | *0.02500* | | *77* | *30-150* | | | |
| *Surrogate: Tetrachloro-m-xylene [2C]* | *0.0195* | | mg/kg wet | *0.02500* | | *78* | *30-150* | | | |
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71801 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 2,4,5-T | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-T [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4,5-TP (Silvex) [2C] | ND | 0.010 | mg/kg wet | | | | | | | |
| 2,4-D | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-D [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| 2,4-DB | ND | 0.048 | mg/kg wet | | | | | | | |
| 2,4-DB [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| Dalapon | ND | 0.046 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71801 - 3546** | | | | | | | | | | |
| Dalapon [2C] | ND | 0.046 | mg/kg wet | | | | | | | |
| Dicamba | ND | 0.009 | mg/kg wet | | | | | | | |
| Dicamba [2C] | ND | 0.009 | mg/kg wet | | | | | | | |
| Dichlorprop | ND | 0.047 | mg/kg wet | | | | | | | |
| Dichlorprop [2C] | ND | 0.047 | mg/kg wet | | | | | | | |
| Dinoseb | ND | 0.048 | mg/kg wet | | | | | | | |
| Dinoseb [2C] | ND | 0.048 | mg/kg wet | | | | | | | |
| MCPA | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPA [2C] | ND | 2.32 | mg/kg wet | | | | | | | |
| MCPP | ND | 2.35 | mg/kg wet | | | | | | | |
| MCPP [2C] | ND | 2.35 | mg/kg wet | | | | | | | |
| *Surrogate: DCAA* | *0.171* | | mg/kg wet | *0.2000* | | *85* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.176* | | mg/kg wet | *0.2000* | | *88* | *30-150* | | | |
| **LCS** | | | | | | | | | | |
| 2,4,5-T | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 74 | 40-140 | | | |
| 2,4,5-T [2C] | 0.014 | 0.010 | mg/kg wet | 0.01900 | | 74 | 40-140 | | | |
| 2,4,5-TP (Silvex) | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 80 | 40-140 | | | |
| 2,4,5-TP (Silvex) [2C] | 0.015 | 0.010 | mg/kg wet | 0.01900 | | 78 | 40-140 | | | |
| 2,4-D | 0.130 | 0.047 | mg/kg wet | 0.1880 | | 69 | 40-140 | | | |
| 2,4-D [2C] | 0.148 | 0.047 | mg/kg wet | 0.1880 | | 79 | 40-140 | | | |
| 2,4-DB | 0.149 | 0.048 | mg/kg wet | 0.1900 | | 78 | 40-140 | | | |
| 2,4-DB [2C] | 0.146 | 0.048 | mg/kg wet | 0.1900 | | 77 | 40-140 | | | |
| Dalapon | 0.304 | 0.046 | mg/kg wet | 0.4550 | | 67 | 40-140 | | | |
| Dalapon [2C] | 0.385 | 0.046 | mg/kg wet | 0.4550 | | 85 | 40-140 | | | |
| Dicamba | 0.017 | 0.009 | mg/kg wet | 0.01880 | | 88 | 40-140 | | | |
| Dicamba [2C] | 0.016 | 0.009 | mg/kg wet | 0.01880 | | 86 | 40-140 | | | |
| Dichlorprop | 0.157 | 0.047 | mg/kg wet | 0.1880 | | 83 | 40-140 | | | |
| Dichlorprop [2C] | 0.160 | 0.047 | mg/kg wet | 0.1880 | | 85 | 40-140 | | | |
| Dinoseb | 0.011 | 0.048 | mg/kg wet | 0.09500 | | 11 | 10-100 | | | |
| Dinoseb [2C] | 0.011 | 0.048 | mg/kg wet | 0.09500 | | 12 | 10-100 | | | |
| MCPA | 17.1 | 2.32 | mg/kg wet | 18.60 | | 92 | 40-140 | | | |
| MCPA [2C] | 14.5 | 2.32 | mg/kg wet | 18.60 | | 78 | 40-140 | | | |
| MCPP | 14.4 | 2.35 | mg/kg wet | 18.80 | | 76 | 40-140 | | | |
| MCPP [2C] | 16.2 | 2.35 | mg/kg wet | 18.80 | | 86 | 40-140 | | | |
| *Surrogate: DCAA* | *0.175* | | mg/kg wet | *0.2000* | | *87* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.182* | | mg/kg wet | *0.2000* | | *91* | *30-150* | | | |
| **LCS Dup** | | | | | | | | | | |
| 2,4,5-T | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 88 | 40-140 | 17 | 30 | |
| 2,4,5-T [2C] | 0.016 | 0.010 | mg/kg wet | 0.01900 | | 86 | 40-140 | 15 | 30 | |
| 2,4,5-TP (Silvex) | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 92 | 40-140 | 14 | 30 | |
| 2,4,5-TP (Silvex) [2C] | 0.017 | 0.010 | mg/kg wet | 0.01900 | | 88 | 40-140 | 12 | 30 | |
| 2,4-D | 0.149 | 0.047 | mg/kg wet | 0.1880 | | 79 | 40-140 | 14 | 30 | |
| 2,4-D [2C] | 0.156 | 0.047 | mg/kg wet | 0.1880 | | 83 | 40-140 | 5 | 30 | |
| 2,4-DB | 0.168 | 0.048 | mg/kg wet | 0.1900 | | 88 | 40-140 | 12 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8151A Chlorinated Herbicides** | | | | | | | | | | |
| **Batch CL71801 - 3546** | | | | | | | | | | |
| 2,4-DB [2C] | 0.170 | 0.048 | mg/kg wet | 0.1900 | | 89 | 40-140 | 15 | 30 | |
| Dalapon | 0.345 | 0.046 | mg/kg wet | 0.4550 | | 76 | 40-140 | 13 | 30 | |
| Dalapon [2C] | 0.419 | 0.046 | mg/kg wet | 0.4550 | | 92 | 40-140 | 8 | 30 | |
| Dicamba | 0.017 | 0.009 | mg/kg wet | 0.01880 | | 90 | 40-140 | 2 | 30 | |
| Dicamba [2C] | 0.018 | 0.009 | mg/kg wet | 0.01880 | | 96 | 40-140 | 11 | 30 | |
| Dichlorprop | 0.179 | 0.047 | mg/kg wet | 0.1880 | | 95 | 40-140 | 13 | 30 | |
| Dichlorprop [2C] | 0.184 | 0.047 | mg/kg wet | 0.1880 | | 98 | 40-140 | 14 | 30 | |
| Dinoseb | 0.012 | 0.048 | mg/kg wet | 0.09500 | | 13 | 10-100 | 13 | 30 | |
| Dinoseb [2C] | 0.012 | 0.048 | mg/kg wet | 0.09500 | | 13 | 10-100 | 6 | 30 | |
| MCPA | 17.3 | 2.32 | mg/kg wet | 18.60 | | 93 | 40-140 | 1 | 30 | |
| MCPA [2C] | 16.8 | 2.32 | mg/kg wet | 18.60 | | 90 | 40-140 | 15 | 30 | |
| MCPP | 16.7 | 2.35 | mg/kg wet | 18.80 | | 89 | 40-140 | 15 | 30 | |
| MCPP [2C] | 17.1 | 2.35 | mg/kg wet | 18.80 | | 91 | 40-140 | 5 | 30 | |
| *Surrogate: DCAA* | *0.184* | | mg/kg wet | *0.2000* | | *92* | *30-150* | | | |
| *Surrogate: DCAA [2C]* | *0.193* | | mg/kg wet | *0.2000* | | *97* | *30-150* | | | |
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.15* | | mg/kg wet | *3.333* | | *64* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.42* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.20* | | mg/kg wet | *5.000* | | *64* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.40* | | mg/kg wet | *3.333* | | *72* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.85* | | mg/kg wet | *5.000* | | *57* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.23* | | mg/kg wet | *3.333* | | *67* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *2.96* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.84* | | mg/kg wet | *3.333* | | *85* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| 1,4-Dichlorobenzene | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 3.36 | 0.333 | mg/kg wet | 3.333 | | 101 | 30-130 | | | |
| 2,4-Dichlorophenol | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.68 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | | | |
| 2,4-Dinitrophenol | 3.08 | 1.67 | mg/kg wet | 3.333 | | 92 | 30-130 | | | |
| 2,4-Dinitrotoluene | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 2-Chloronaphthalene | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 2-Chlorophenol | 2.57 | 0.333 | mg/kg wet | 3.333 | | 77 | 30-130 | | | |
| 2-Methylnaphthalene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| 2-Methylphenol | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 30-130 | | | |
| 2-Nitrophenol | 3.03 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.67 | 0.667 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| 3+4-Methylphenol | 5.19 | 0.667 | mg/kg wet | 6.667 | | 78 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 3.70 | 0.333 | mg/kg wet | 3.333 | | 111 | 40-140 | | | |
| 4-Chloroaniline | 1.68 | 0.667 | mg/kg wet | 3.333 | | 50 | 40-140 | | | |
| 4-Nitrophenol | 2.00 | 1.67 | mg/kg wet | 3.333 | | 60 | 30-130 | | | |
| Acenaphthene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Acenaphthylene | 2.72 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | | | |
| Acetophenone | 2.55 | 0.667 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Aniline | 1.97 | 1.67 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| Anthracene | 3.00 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Azobenzene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Benzo(a)anthracene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Benzo(a)pyrene | 3.08 | 0.167 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.74 | 0.333 | mg/kg wet | 3.333 | | 112 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.14 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 2.56 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.47 | 0.333 | mg/kg wet | 3.333 | | 104 | 40-140 | | | |
| Butylbenzylphthalate | 3.25 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | | | |
| Chrysene | 3.17 | 0.167 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.67 | 0.167 | mg/kg wet | 3.333 | | 110 | 40-140 | | | |
| Dibenzofuran | 2.67 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Diethylphthalate | 2.64 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Dimethylphthalate | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Di-n-butylphthalate | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Di-n-octylphthalate | 3.29 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | | | |
| Fluoranthene | 2.63 | 0.333 | mg/kg wet | 3.333 | | 79 | 40-140 | | | |
| Fluorene | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Hexachlorobenzene | 3.62 | 0.333 | mg/kg wet | 3.333 | | 109 | 40-140 | | | |
| Hexachlorobutadiene | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

## 8270D Semi-Volatile Organic Compounds

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch CL71407 - 3546** | | | | | | | | | | |
| Hexachloroethane | 2.60 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.63 | 0.333 | mg/kg wet | 3.333 | | 109 | 40-140 | | | |
| Isophorone | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | | | |
| Naphthalene | 2.75 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Nitrobenzene | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.80 | 0.333 | mg/kg wet | 3.333 | | 54 | 40-140 | | | |
| Pentachlorophenol | 3.30 | 1.67 | mg/kg wet | 3.333 | | 99 | 30-130 | | | |
| Phenanthrene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Phenol | 2.48 | 0.333 | mg/kg wet | 3.333 | | 74 | 30-130 | | | |
| Pyrene | 3.18 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.40* | | mg/kg wet | *3.333* | | *72* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.16* | | mg/kg wet | *5.000* | | *103* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.78* | | mg/kg wet | *5.000* | | *76* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.83* | | mg/kg wet | *3.333* | | *85* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *3.23* | | mg/kg wet | *5.000* | | *65* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.54* | | mg/kg wet | *3.333* | | *76* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.41* | | mg/kg wet | *5.000* | | *68* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.94* | | mg/kg wet | *3.333* | | *88* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 14 | 30 | |
| 1,2-Dichlorobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 13 | 30 | |
| 1,3-Dichlorobenzene | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 13 | 30 | |
| 1,4-Dichlorobenzene | 2.32 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | 13 | 30 | |
| 2,4,5-Trichlorophenol | 2.86 | 0.333 | mg/kg wet | 3.333 | | 86 | 30-130 | 11 | 30 | |
| 2,4,6-Trichlorophenol | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | 13 | 30 | |
| 2,4-Dichlorophenol | 2.59 | 0.333 | mg/kg wet | 3.333 | | 78 | 30-130 | 16 | 30 | |
| 2,4-Dimethylphenol | 2.36 | 0.333 | mg/kg wet | 3.333 | | 71 | 30-130 | 13 | 30 | |
| 2,4-Dinitrophenol | 2.96 | 1.67 | mg/kg wet | 3.333 | | 89 | 30-130 | 4 | 30 | |
| 2,4-Dinitrotoluene | 2.35 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 4 | 30 | |
| 2,6-Dinitrotoluene | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 11 | 30 | |
| 2-Chloronaphthalene | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 11 | 30 | |
| 2-Chlorophenol | 2.26 | 0.333 | mg/kg wet | 3.333 | | 68 | 30-130 | 13 | 30 | |
| 2-Methylnaphthalene | 2.40 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 17 | 30 | |
| 2-Methylphenol | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 30-130 | 19 | 30 | |
| 2-Nitrophenol | 2.65 | 0.333 | mg/kg wet | 3.333 | | 79 | 30-130 | 14 | 30 | |
| 3,3´-Dichlorobenzidine | 2.39 | 0.667 | mg/kg wet | 3.333 | | 72 | 40-140 | 11 | 30 | |
| 3+4-Methylphenol | 4.53 | 0.667 | mg/kg wet | 6.667 | | 68 | 30-130 | 14 | 30 | |
| 4-Bromophenyl-phenylether | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 18 | 30 | |
| 4-Chloroaniline | 1.60 | 0.667 | mg/kg wet | 3.333 | | 48 | 40-140 | 5 | 30 | |
| 4-Nitrophenol | 1.89 | 1.67 | mg/kg wet | 3.333 | | 57 | 30-130 | 5 | 30 | |
| Acenaphthene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 12 | 30 | |
| Acenaphthylene | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 13 | 30 | |
| Acetophenone | 2.26 | 0.667 | mg/kg wet | 3.333 | | 68 | 40-140 | 12 | 30 | |
| Aniline | 1.73 | 1.67 | mg/kg wet | 3.333 | | 52 | 40-140 | 13 | 30 | |
| Anthracene | 2.70 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 11 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71407 - 3546** | | | | | | | | | | |
| Azobenzene | 2.54 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 19 | 30 | |
| Benzo(a)anthracene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | 11 | 30 | |
| Benzo(a)pyrene | 2.82 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | 9 | 30 | |
| Benzo(b)fluoranthene | 2.73 | 0.333 | mg/kg wet | 3.333 | | 82 | 40-140 | 5 | 30 | |
| Benzo(g,h,i)perylene | 3.26 | 0.333 | mg/kg wet | 3.333 | | 98 | 40-140 | 14 | 30 | |
| Benzo(k)fluoranthene | 2.84 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 10 | 30 | |
| bis(2-Chloroethoxy)methane | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 15 | 30 | |
| bis(2-Chloroethyl)ether | 2.08 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | 13 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 15 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.20 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 8 | 30 | |
| Butylbenzylphthalate | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 8 | 30 | |
| Chrysene | 2.85 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | 11 | 30 | |
| Dibenzo(a,h)Anthracene | 3.23 | 0.167 | mg/kg wet | 3.333 | | 97 | 40-140 | 13 | 30 | |
| Dibenzofuran | 2.37 | 0.333 | mg/kg wet | 3.333 | | 71 | 40-140 | 12 | 30 | |
| Diethylphthalate | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | 10 | 30 | |
| Dimethylphthalate | 2.45 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 12 | 30 | |
| Di-n-butylphthalate | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 4 | 30 | |
| Di-n-octylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 4 | 30 | |
| Fluoranthene | 2.58 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 2 | 30 | |
| Fluorene | 2.52 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | 11 | 30 | |
| Hexachlorobenzene | 3.08 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 16 | 30 | |
| Hexachlorobutadiene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | 14 | 30 | |
| Hexachloroethane | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 13 | 30 | |
| Indeno(1,2,3-cd)Pyrene | 3.24 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | 11 | 30 | |
| Isophorone | 2.01 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | 15 | 30 | |
| Naphthalene | 2.42 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 13 | 30 | |
| Nitrobenzene | 2.24 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 7 | 30 | |
| N-Nitrosodimethylamine | 1.54 | 0.333 | mg/kg wet | 3.333 | | 46 | 40-140 | 16 | 30 | |
| Pentachlorophenol | 2.78 | 1.67 | mg/kg wet | 3.333 | | 83 | 30-130 | 17 | 30 | |
| Phenanthrene | 2.62 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 12 | 30 | |
| Phenol | 2.06 | 0.333 | mg/kg wet | 3.333 | | 62 | 30-130 | 19 | 30 | |
| Pyrene | 2.80 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | 13 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.21* | | mg/kg wet | *3.333* | | *66* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.73* | | mg/kg wet | *5.000* | | *95* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.47* | | mg/kg wet | *5.000* | | *69* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.64* | | mg/kg wet | *3.333* | | *79* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.97* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.35* | | mg/kg wet | *3.333* | | *71* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.17* | | mg/kg wet | *5.000* | | *63* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.87* | | mg/kg wet | *3.333* | | *86* | *30-130* | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| 1,4-Dichlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Methylphenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | ND | 0.333 | mg/kg wet | | | | | | | |
| 3,3´-Dichlorobenzidine | ND | 0.667 | mg/kg wet | | | | | | | |
| 3+4-Methylphenol | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | ND | 0.333 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | ND | 0.667 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Acenaphthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acenaphthylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Acetophenone | ND | 0.667 | mg/kg wet | | | | | | | |
| Aniline | ND | 1.67 | mg/kg wet | | | | | | | |
| Anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Azobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)anthracene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | ND | 0.167 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | ND | 0.333 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethoxy)methane | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Chloroethyl)ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-chloroisopropyl)Ether | ND | 0.333 | mg/kg wet | | | | | | | |
| bis(2-Ethylhexyl)phthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Chrysene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)Anthracene | ND | 0.167 | mg/kg wet | | | | | | | |
| Dibenzofuran | ND | 0.333 | mg/kg wet | | | | | | | |
| Diethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Dimethylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluoranthene | ND | 0.333 | mg/kg wet | | | | | | | |
| Fluorene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | ND | 0.333 | mg/kg wet | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| 8270D Semi-Volatile Organic Compounds | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| Hexachloroethane | ND | 0.333 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Isophorone | ND | 0.333 | mg/kg wet | | | | | | | |
| Naphthalene | ND | 0.333 | mg/kg wet | | | | | | | |
| Nitrobenzene | ND | 0.333 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | ND | 0.333 | mg/kg wet | | | | | | | |
| Pentachlorophenol | ND | 1.67 | mg/kg wet | | | | | | | |
| Phenanthrene | ND | 0.333 | mg/kg wet | | | | | | | |
| Phenol | ND | 0.333 | mg/kg wet | | | | | | | |
| Pyrene | ND | 0.333 | mg/kg wet | | | | | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *1.91* | | mg/kg wet | *3.333* | | *57* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.18* | | mg/kg wet | *5.000* | | *64* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *2.93* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.02* | | mg/kg wet | *3.333* | | *60* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.61* | | mg/kg wet | *5.000* | | *52* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.93* | | mg/kg wet | *3.333* | | *58* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *2.77* | | mg/kg wet | *5.000* | | *55* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *2.98* | | mg/kg wet | *3.333* | | *89* | *30-130* | | | |
| **LCS** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | | | |
| 1,2-Dichlorobenzene | 2.13 | 0.333 | mg/kg wet | 3.333 | | 64 | 40-140 | | | |
| 1,3-Dichlorobenzene | 2.10 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| 1,4-Dichlorobenzene | 2.10 | 0.333 | mg/kg wet | 3.333 | | 63 | 40-140 | | | |
| 2,4,5-Trichlorophenol | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 30-130 | | | |
| 2,4,6-Trichlorophenol | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 30-130 | | | |
| 2,4-Dichlorophenol | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 30-130 | | | |
| 2,4-Dimethylphenol | 2.22 | 0.333 | mg/kg wet | 3.333 | | 66 | 30-130 | | | |
| 2,4-Dinitrophenol | 3.35 | 1.67 | mg/kg wet | 3.333 | | 101 | 30-130 | | | |
| 2,4-Dinitrotoluene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| 2,6-Dinitrotoluene | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| 2-Chloronaphthalene | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | | | |
| 2-Chlorophenol | 2.02 | 0.333 | mg/kg wet | 3.333 | | 61 | 30-130 | | | |
| 2-Methylnaphthalene | 2.29 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | | | |
| 2-Methylphenol | 2.39 | 0.333 | mg/kg wet | 3.333 | | 72 | 30-130 | | | |
| 2-Nitrophenol | 2.34 | 0.333 | mg/kg wet | 3.333 | | 70 | 30-130 | | | |
| 3,3´-Dichlorobenzidine | 2.36 | 0.667 | mg/kg wet | 3.333 | | 71 | 40-140 | | | |
| 3+4-Methylphenol | 4.47 | 0.667 | mg/kg wet | 6.667 | | 67 | 30-130 | | | |
| 4-Bromophenyl-phenylether | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| 4-Chloroaniline | 1.89 | 0.667 | mg/kg wet | 3.333 | | 57 | 40-140 | | | |
| 4-Nitrophenol | 2.55 | 1.67 | mg/kg wet | 3.333 | | 77 | 30-130 | | | |
| Acenaphthene | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Acenaphthylene | 2.38 | 0.333 | mg/kg wet | 3.333 | | 72 | 40-140 | | | |
| Acetophenone | 2.06 | 0.667 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| Aniline | 1.61 | 1.67 | mg/kg wet | 3.333 | | 48 | 40-140 | | | |
| Anthracene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| Azobenzene | 2.31 | 0.333 | mg/kg wet | 3.333 | | 69 | 40-140 | | | |
| Benzo(a)anthracene | 2.65 | 0.333 | mg/kg wet | 3.333 | | 80 | 40-140 | | | |
| Benzo(a)pyrene | 2.83 | 0.167 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| Benzo(b)fluoranthene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 83 | 40-140 | | | |
| Benzo(g,h,i)perylene | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | | | |
| Benzo(k)fluoranthene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| bis(2-Chloroethoxy)methane | 2.07 | 0.333 | mg/kg wet | 3.333 | | 62 | 40-140 | | | |
| bis(2-Chloroethyl)ether | 1.82 | 0.333 | mg/kg wet | 3.333 | | 55 | 40-140 | | | |
| bis(2-chloroisopropyl)Ether | 1.96 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | | | |
| bis(2-Ethylhexyl)phthalate | 3.25 | 0.333 | mg/kg wet | 3.333 | | 97 | 40-140 | | | |
| Butylbenzylphthalate | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | | | |
| Chrysene | 2.89 | 0.167 | mg/kg wet | 3.333 | | 87 | 40-140 | | | |
| Dibenzo(a,h)Anthracene | 3.12 | 0.167 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Dibenzofuran | 2.53 | 0.333 | mg/kg wet | 3.333 | | 76 | 40-140 | | | |
| Diethylphthalate | 2.98 | 0.333 | mg/kg wet | 3.333 | | 89 | 40-140 | | | |
| Dimethylphthalate | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | | | |
| Di-n-butylphthalate | 3.16 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | | | |
| Di-n-octylphthalate | 3.48 | 0.333 | mg/kg wet | 3.333 | | 104 | 40-140 | | | |
| Fluoranthene | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | | | |
| Fluorene | 2.95 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | | | |
| Hexachlorobenzene | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 40-140 | | | |
| Hexachlorobutadiene | 2.42 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | | | |
| Hexachloroethane | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | | | |
| Indeno(1,2,3-cd)Pyrene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | | | |
| Isophorone | 1.89 | 0.333 | mg/kg wet | 3.333 | | 57 | 40-140 | | | |
| Naphthalene | 2.19 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | | | |
| Nitrobenzene | 1.99 | 0.333 | mg/kg wet | 3.333 | | 60 | 40-140 | | | |
| N-Nitrosodimethylamine | 1.48 | 0.333 | mg/kg wet | 3.333 | | 45 | 40-140 | | | |
| Pentachlorophenol | 3.24 | 1.67 | mg/kg wet | 3.333 | | 97 | 30-130 | | | |
| Phenanthrene | 2.78 | 0.333 | mg/kg wet | 3.333 | | 84 | 40-140 | | | |
| Phenol | 1.93 | 0.333 | mg/kg wet | 3.333 | | 58 | 30-130 | | | |
| Pyrene | 2.83 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | | | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.10* | | mg/kg wet | *3.333* | | *63* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *5.00* | | mg/kg wet | *5.000* | | *100* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.29* | | mg/kg wet | *5.000* | | *66* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.42* | | mg/kg wet | *3.333* | | *73* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.92* | | mg/kg wet | *5.000* | | *58* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.20* | | mg/kg wet | *3.333* | | *66* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.01* | | mg/kg wet | *5.000* | | *60* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.08* | | mg/kg wet | *3.333* | | *92* | *30-130* | | | |
| **LCS Dup** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | 2.43 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 5 | 30 | |
| 1,2-Dichlorobenzene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 5 | 30 | |
| 1,3-Dichlorobenzene | 2.21 | 0.333 | mg/kg wet | 3.333 | | 66 | 40-140 | 5 | 30 | |
| 1,4-Dichlorobenzene | 2.22 | 0.333 | mg/kg wet | 3.333 | | 67 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| 2,4,5-Trichlorophenol | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 30-130 | 2 | 30 | |
| 2,4,6-Trichlorophenol | 3.04 | 0.333 | mg/kg wet | 3.333 | | 91 | 30-130 | 3 | 30 | |
| 2,4-Dichlorophenol | 2.66 | 0.333 | mg/kg wet | 3.333 | | 80 | 30-130 | 6 | 30 | |
| 2,4-Dimethylphenol | 2.41 | 0.333 | mg/kg wet | 3.333 | | 72 | 30-130 | 9 | 30 | |
| 2,4-Dinitrophenol | 3.59 | 1.67 | mg/kg wet | 3.333 | | 108 | 30-130 | 7 | 30 | |
| 2,4-Dinitrotoluene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 3 | 30 | |
| 2,6-Dinitrotoluene | 2.88 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 2 | 30 | |
| 2-Chloronaphthalene | 2.28 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 6 | 30 | |
| 2-Chlorophenol | 2.14 | 0.333 | mg/kg wet | 3.333 | | 64 | 30-130 | 6 | 30 | |
| 2-Methylnaphthalene | 2.43 | 0.333 | mg/kg wet | 3.333 | | 73 | 40-140 | 6 | 30 | |
| 2-Methylphenol | 2.38 | 0.333 | mg/kg wet | 3.333 | | 72 | 30-130 | 0.3 | 30 | |
| 2-Nitrophenol | 2.51 | 0.333 | mg/kg wet | 3.333 | | 75 | 30-130 | 7 | 30 | |
| 3,3´-Dichlorobenzidine | 2.25 | 0.667 | mg/kg wet | 3.333 | | 68 | 40-140 | 5 | 30 | |
| 3+4-Methylphenol | 4.77 | 0.667 | mg/kg wet | 6.667 | | 72 | 30-130 | 7 | 30 | |
| 4-Bromophenyl-phenylether | 3.01 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 0.6 | 30 | |
| 4-Chloroaniline | 1.92 | 0.667 | mg/kg wet | 3.333 | | 58 | 40-140 | 2 | 30 | |
| 4-Nitrophenol | 2.71 | 1.67 | mg/kg wet | 3.333 | | 81 | 30-130 | 6 | 30 | |
| Acenaphthene | 2.61 | 0.333 | mg/kg wet | 3.333 | | 78 | 40-140 | 3 | 30 | |
| Acenaphthylene | 2.46 | 0.333 | mg/kg wet | 3.333 | | 74 | 40-140 | 3 | 30 | |
| Acetophenone | 2.19 | 0.667 | mg/kg wet | 3.333 | | 66 | 40-140 | 6 | 30 | |
| Aniline | 1.45 | 1.67 | mg/kg wet | 3.333 | | 44 | 40-140 | 10 | 30 | |
| Anthracene | 2.92 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 2 | 30 | |
| Azobenzene | 2.33 | 0.333 | mg/kg wet | 3.333 | | 70 | 40-140 | 0.8 | 30 | |
| Benzo(a)anthracene | 2.71 | 0.333 | mg/kg wet | 3.333 | | 81 | 40-140 | 2 | 30 | |
| Benzo(a)pyrene | 2.87 | 0.167 | mg/kg wet | 3.333 | | 86 | 40-140 | 1 | 30 | |
| Benzo(b)fluoranthene | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 5 | 30 | |
| Benzo(g,h,i)perylene | 3.21 | 0.333 | mg/kg wet | 3.333 | | 96 | 40-140 | 0.06 | 30 | |
| Benzo(k)fluoranthene | 2.94 | 0.333 | mg/kg wet | 3.333 | | 88 | 40-140 | 5 | 30 | |
| bis(2-Chloroethoxy)methane | 2.17 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 5 | 30 | |
| bis(2-Chloroethyl)ether | 1.90 | 0.333 | mg/kg wet | 3.333 | | 57 | 40-140 | 4 | 30 | |
| bis(2-chloroisopropyl)Ether | 2.05 | 0.333 | mg/kg wet | 3.333 | | 61 | 40-140 | 5 | 30 | |
| bis(2-Ethylhexyl)phthalate | 3.31 | 0.333 | mg/kg wet | 3.333 | | 99 | 40-140 | 2 | 30 | |
| Butylbenzylphthalate | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 2 | 30 | |
| Chrysene | 2.97 | 0.167 | mg/kg wet | 3.333 | | 89 | 40-140 | 3 | 30 | |
| Dibenzo(a,h)Anthracene | 3.10 | 0.167 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.4 | 30 | |
| Dibenzofuran | 2.58 | 0.333 | mg/kg wet | 3.333 | | 77 | 40-140 | 2 | 30 | |
| Diethylphthalate | 3.07 | 0.333 | mg/kg wet | 3.333 | | 92 | 40-140 | 3 | 30 | |
| Dimethylphthalate | 2.91 | 0.333 | mg/kg wet | 3.333 | | 87 | 40-140 | 1 | 30 | |
| Di-n-butylphthalate | 3.17 | 0.333 | mg/kg wet | 3.333 | | 95 | 40-140 | 0.1 | 30 | |
| Di-n-octylphthalate | 3.46 | 0.333 | mg/kg wet | 3.333 | | 104 | 40-140 | 0.5 | 30 | |
| Fluoranthene | 3.13 | 0.333 | mg/kg wet | 3.333 | | 94 | 40-140 | 2 | 30 | |
| Fluorene | 2.99 | 0.333 | mg/kg wet | 3.333 | | 90 | 40-140 | 2 | 30 | |
| Hexachlorobenzene | 3.09 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 2 | 30 | |
| Hexachlorobutadiene | 2.50 | 0.333 | mg/kg wet | 3.333 | | 75 | 40-140 | 3 | 30 | |
| Hexachloroethane | 2.16 | 0.333 | mg/kg wet | 3.333 | | 65 | 40-140 | 6 | 30 | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

# Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|
| **8270D Semi-Volatile Organic Compounds** | | | | | | | | | | |
| **Batch CL71507 - 3546** | | | | | | | | | | |
| Indeno(1,2,3-cd)Pyrene | 3.11 | 0.333 | mg/kg wet | 3.333 | | 93 | 40-140 | 0.1 | 30 | |
| Isophorone | 1.96 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 3 | 30 | |
| Naphthalene | 2.27 | 0.333 | mg/kg wet | 3.333 | | 68 | 40-140 | 4 | 30 | |
| Nitrobenzene | 1.97 | 0.333 | mg/kg wet | 3.333 | | 59 | 40-140 | 1 | 30 | |
| N-Nitrosodimethylamine | 1.51 | 0.333 | mg/kg wet | 3.333 | | 45 | 40-140 | 2 | 30 | |
| Pentachlorophenol | 3.50 | 1.67 | mg/kg wet | 3.333 | | 105 | 30-130 | 8 | 30 | |
| Phenanthrene | 2.82 | 0.333 | mg/kg wet | 3.333 | | 85 | 40-140 | 1 | 30 | |
| Phenol | 2.04 | 0.333 | mg/kg wet | 3.333 | | 61 | 30-130 | 5 | 30 | |
| Pyrene | 2.87 | 0.333 | mg/kg wet | 3.333 | | 86 | 40-140 | 1 | 30 | |
| *Surrogate: 1,2-Dichlorobenzene-d4* | *2.16* | | mg/kg wet | *3.333* | | *65* | *30-130* | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *4.92* | | mg/kg wet | *5.000* | | *98* | *30-130* | | | |
| *Surrogate: 2-Chlorophenol-d4* | *3.37* | | mg/kg wet | *5.000* | | *67* | *30-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *2.47* | | mg/kg wet | *3.333* | | *74* | *30-130* | | | |
| *Surrogate: 2-Fluorophenol* | *2.96* | | mg/kg wet | *5.000* | | *59* | *30-130* | | | |
| *Surrogate: Nitrobenzene-d5* | *2.22* | | mg/kg wet | *3.333* | | *67* | *30-130* | | | |
| *Surrogate: Phenol-d6* | *3.12* | | mg/kg wet | *5.000* | | *62* | *30-130* | | | |
| *Surrogate: p-Terphenyl-d14* | *3.03* | | mg/kg wet | *3.333* | | *91* | *30-130* | | | |
| **Classical Chemistry** | | | | | | | | | | |
| **Batch CL72151 - General Preparation** | | | | | | | | | | |
| **Blank** | | | | | | | | | | |
| Total Organic Carbon (1) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (2) | ND | 100 | mg/kg | | | | | | | |
| Total Organic Carbon (Average) | ND | 100 | mg/kg dry wt | | | | | | | |
| **LCS** | | | | | | | | | | |
| Total Organic Carbon (1) | 11500 | 100 | mg/kg | 10000 | | 115 | 80-120 | | | |
| Total Organic Carbon (2) | 11400 | 100 | mg/kg | 10000 | | 114 | 80-120 | | | |
| Total Organic Carbon (Average) | 11400 | 100 | mg/kg dry wt | | | | | | | |
| **LCS Dup** | | | | | | | | | | |
| Total Organic Carbon (1) | 9490 | 100 | mg/kg | 10000 | | 95 | 80-120 | 19 | 200 | |
| Total Organic Carbon (2) | 10500 | 100 | mg/kg | 10000 | | 105 | 80-120 | 8 | 200 | |
| Total Organic Carbon (Average) | 9970 | 100 | mg/kg dry wt | | | | | | | |
| **Reference** | | | | | | | | | | |
| Total Organic Carbon (Average) | 1.50 | | mg/kg dry wt | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712347

**Notes and Definitions**

| | |
|---|---|
| Z-09 | ND |
| Z-08 | See Attached |
| XH | Peaks found in the retention time window for MCPA did not confirm by GC/MS. |
| U | Analyte included in the analysis, but not detected |
| TR | RSD of replicate analysis >25%. Reanalysis produced similar results. |
| S+ | Surrogate recovery(ies) above upper control limit (S+). |
| RRF | Analyte does not meet the Relative Response Factor (RRF) criteria in the calibration |
| Q | Calibration required quadratic regression (Q). |
| D+ | Relative percent difference for duplicate is outside of criteria (D+). |
| D | Diluted. |
| CD+ | Continuing Calibration %Diff/Drift is above control limit (CD+). |
| CD- | Continuing Calibration %Diff/Drift is below control limit (CD-). |
| B+ | Blank Spike recovery is above upper control limit (B+). |
| # | Modified result |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712347

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

Pace Analytical™
www.pacelabs.com

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## Report Prepared for:

Shawn Morrell
ESS Laboratory
185 Frances Avenue
Cranston RI 02910-2211

# REPORT OF LABORATORY ANALYSIS FOR PCDD/PCDF

## Report Information:

**Pace Project #: 10414791**
**Sample Receipt Date: 12/16/2017**
**Client Project #: 1712347**
**Client Sub PO #: B02407**
**State Cert #: N/A**

### Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

### This report has been reviewed by:

Joanne Richardson

December 28, 2017

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

### Report Prepared Date:

December 28, 2017

## Report of Laboratory Analysis

This report should not be reproduced, except in full, without the written consent of Pace Analytical Services, Inc.

The results relate only to the samples included in this report.

**Pace Analytical Services, Inc.**
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

## DISCUSSION

This report presents the results from the analyses performed on eleven samples submitted by a representative of ESS Laboratory. The samples were analyzed for the presence or absence of polychlorodibenzo-p-dioxins (PCDDs) and polychlorodibenzofurans (PCDFs) using a modified version of USEPA Method 8290. The reporting limits were set to correspond to the lowest calibration points and a nominal 10-gram sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report.

The recoveries of the isotopically-labeled PCDD/PCDF internal standards in the sample extracts ranged from 44-82%. All of the labeled standard recoveries obtained for this project were within the 40-135% target range specified in Method 8290. Also, since the quantification of the native 2,3,7,8-substituted congeners was based on isotope dilution, the data were automatically corrected for variation in recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with each sample batch as part of our routine quality control procedures. The results show the blanks to be free of PCDDs and PCDFs at the reporting limits. These results indicate that the sample processing steps did not significantly impact the results reported for the field samples.

Laboratory and matrix spike samples were also prepared with the sample batches using clean reference matrix or sample matrix that had been fortified with native standard materials. The results show that the spiked native compounds were recovered at 78-100% with relative percent differences of 0.2-7.8%. These results were within the target ranges for the method. Matrix spikes were prepared with the 12/19/2017 extraction batch using sample material from a separate project; results from these analyses will be provided upon request.



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Minnesota Laboratory Certifications

| Authority | Certificate # | Authority | Certificate # |
|---|---|---|---|
| A2LA | 2926.01 | Mississippi | MN00064 |
| Alabama | 40770 | Montana | CERT0092 |
| Alaska | MN00064 | Nebraska | NE-OS-18-06 |
| Alaska | UST-078 | Nevada | MN00064 |
| Arizona | AZ0014 | New Jersey (NE | MN002 |
| Arkansas | 88-0680 | New York (NEL | 11647 |
| CNMI Saipan | MP0003 | New hampshire | 2081 |
| California | MN00064 | North Carolina | 27700 |
| Colorado | MN00064 | North Carolina | 530 |
| Connecticut | PH-0256 | North Dakota | R-036 |
| EPA Region 8 | 8TMS-L | Ohio | 41244 |
| Florida (NELAP | E87605 | Ohio VAP | CL101 |
| Georgia (EDP) | 959 | Oklahoma | 9507 |
| Guam EPA | 959 | Oregon (ELAP) | MN200001 |
| Hawaii | MN00064 | Oregon (OREL | MN300001 |
| Idaho | MN00064 | Pennsylvania | 68-00563 |
| Illinois | 200011 | Puerto Rico | MN00064 |
| Indiana | C-MN-01 | South Carolina | 74003001 |
| Iowa | 368 | Tennessee | TN02818 |
| Kansas | E-10167 | Texas | T104704192 |
| Kentucky | 90062 | Utah (NELAP) | MN00064 |
| Louisiana | 03086 | Virginia | 460163 |
| Louisiana | MN00064 | Washington | C486 |
| Maine | MN00064 | West Virginia # | 9952C |
| Maryland | 322 | West Virginia D | 382 |
| Michigan | 9909 | Wisconsin | 999407970 |
| Minnesota | 027-053-137 | Wyoming | 8TMS-L |

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Report No.....10414791

# Appendix A

Sample Management

10414791

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue, Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time ___ Standard Other **DUE 12/21/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables ***Excel** Access ***PDF**

| | | | |
|---|---|---|---|
| Co. Name: **ESS Laboratory** | Project #: | Project Name: **1712347** | |
| Contact Person: **Shawn Morrell** | Proj. Location: | | |
| Address: **ext 3083** | City , State: | Zip: | PO #: B02407 |
| Tel. | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 12/14/17 | 1010 | G | S | 1712347-01 | 1 | 1 | AG | 001 | X |
| | 12/14/17 | 1015 | G | S | 1712347-02 | 1 | 1 | AG | 002 | X |
| | 12/14/17 | 1020 | G | S | 1712347-03 | 1 | 1 | AG | 003 | X |
| | 12/14/17 | 1025 | G | S | 1712347-04 | 1 | 1 | AG | 004 | X |
| | 12/14/17 | 1030 | G | S | 1712347-05 | 1 | 1 | AG | 005 | X |
| | 12/14/17 | 1035 | G | S | 1712347-06 | 1 | 1 | AG | 006 | X |
| | 12/14/17 | 1040 | G | S | 1712347-07 | 1 | 1 | AG | 007 | X |
| | 12/14/17 | 1045 | G | S | 1712347-08 | 1 | 1 | AG | 008 | X |
| | 12/14/17 | 1050 | G | S | 1712347-09 | 1 | 1 | AG | 009 | X |
| | 12/14/17 | 1055 | G | S | 1712347-10 | 1 | 1 | AG | 010 | X |
| | 12/14/17 | 1100 | G | S | 1712347-11 | 1 | 1 | AG | 011 | X |

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present ✓ Yes ____ No

Seals Intact ✓ Yes ____ No NA:____

Cooler Temperature: 4.7

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 12/15/17 1203 | UPS | | |
| | Pace 12/16/17 1040 | | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

Temp 4.7

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 14Dec2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.22** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS Laboratory

**Project #:** WO#: 10414791

10414791

**Courier:** ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 1Z0374974445617505

**Custody Seal on Cooler/Box Present?** ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

**Thermometer Used:** ☐ 151401163 ☑ G87A9155100842 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

**Cooler Temp Read (°C):** 4.6 **Cooler Temp Corrected (°C):** 4.7 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.1 **Date and Initials of Person Examining Contents:** 12/16/17 LO

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | | | COMMENTS: |
|---|---|---|---|---|
| Chain of Custody Present? | ☑ Yes | ☐ No | | 1. |
| Chain of Custody Filled Out? | ☑ Yes | ☐ No | | 2. |
| Chain of Custody Relinquished? | ☑ Yes | ☐ No | | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes | ☑ No | ☐ N/A | 4. |
| Samples Arrived within Hold Time? | ☑ Yes | ☐ No | | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes | ☑ No | | 6. |
| **Rush Turn Around Time Requested?** | ☑ Yes | ☐ No | | 7. |
| Sufficient Volume? | ☑ Yes | ☐ No | | 8. |
| Correct Containers Used? | ☑ Yes | ☐ No | | 9. |
| -Pace Containers Used? | ☑ Yes | ☐ No | | |
| Containers Intact? | ☑ Yes | ☐ No | | 10. |
| Filtered Volume Received for Dissolved Tests? | ☐ Yes | ☐ No | ☑ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☐ Yes | ☑ No | | 12. there is no time/date on container |
| All containers needing acid/base preservation have been checked? | ☐ Yes | ☐ No | ☑ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N Sample # |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes | ☐ No | ☑ N/A | |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes | ☐ No | ☑ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes | ☐ No | ☑ N/A | 14. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☑ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☑ N/A | |
| Pace Trip Blank Lot # (if purchased): | | | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

**Project Manager Review:** Joanne Richardson **Date:** 12-18-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

10414791 ~~10415275~~ JDD 12-21-17

Report No....10414791_8290FC_DFR

# ESS Laboratory PACE

*Division of Thielsch Engineering, Inc.*

185 Frances Avenue,Cranston RI 02910-2211
Tel. (401)461-7181 Fax (401)461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time ___ Standard Other **DUE 12/28/17**

Reporting Limits - _____

Regulatory State: **MA** RI CT NH NJ NY ME Other_____

Is this project for any of the following:(please circle)

**MA-MCP** Navy USACE CT DEP Other_____

Electonic Deliverables *Excel Access *PDF

| | | | |
|---|---|---|---|
| Co. Name: ESS Laboratory | Project #: | Project Name: 1712347 | |
| Contact Person: Shawn Morrell | Proj. Location: | | |
| Address: ext 3083 | City , State: | Zip: | PO #: B02407 |
| Tel.: | email: smorrell@thielsch.com | | |

| ESS Lab ID | Date | Collection Time | Grab -G Composite-C | Matrix | Sample ID | Pres Code | # of Containers | Type of Container | Vol of Container | Analysis: Dioxin EPA 8290 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 12/14/17 | 1040 | G | S | 1712347-07 | 1 | 1 | AG | | X | | | 007 | | | ~~001~~ | |
| | 12/14/17 | 1050 | G | S | 1712347-09 | 1 | 1 | AG | | X | | | 009 | | | ~~002~~ | |
| | 12/14/17 | 1055 | G | S | 1712347-10 | 1 | 1 | AG | | X | | | 010 | | | ~~003~~ | |
| | 12/14/17 | 1100 | G | S | 1712347-11 | 1 | 1 | AG | | X | | | 011 | | | ~~004~~ | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

JDD 12-21-17

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present _____Yes _____No

Seals Intact ____ Yes _____No NA:____

Cooler Temperature: _____

Internal Use Only
[ ] Pickup
[ ] Technician____

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by :

Comments: ***Please provide electronic deliverables**

| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
|---|---|---|---|
| 12/21/17 1500 | UPS | | |
| Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) | Relinquished by: (Signature, Date & Time) | Received by: (Signature, Date & Time) |
| | PACE 12/21/17 9:40 | T=3.0°C | |

* By circling MA-MCP, client acknowledges sampels were collected in accordance with MADEP CAM VIIA

Please fax to the laboratory all changes to Chain of Custody

**Report Method Blank & Laboratory Control Sample Results**

| Pace Analytical | Document Name: **Sample Condition Upon Receipt Form** | Document Revised: 14Dec2017 Page 1 of 2 |
|---|---|---|
| | Document No.: **F-MN-L-213-rev.22** | Issuing Authority: Pace Minnesota Quality Office |

**Sample Condition Upon Receipt**

**Client Name:** ESS LABORATORY

**Project #:** WO#: 10414791

10414791

**Courier:** ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

**Tracking Number:** 1Z 037 497 01 4510 3980

**Custody Seal on Cooler/Box Present?** ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No

**Optional:** Proj. Due Date: Proj. Name:

**Packing Material:** ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☐ Yes ☒ No

**Thermometer Used:** ☒ 151401163 ☐ G87A9155100842 **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

**Cooler Temp Read (°C):** 3.3 **Cooler Temp Corrected (°C):** 3.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** -0.3 **Date and Initials of Person Examining Contents:** ET 12/21/17

**USDA Regulated Soil** ( ☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

**If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.**

| | | | | COMMENTS: |
|---|---|---|---|---|
| Chain of Custody Present? | ☒ Yes | ☐ No | | 1. |
| Chain of Custody Filled Out? | ☒ Yes | ☐ No | | 2. |
| Chain of Custody Relinquished? | ☐ Yes | ☒ No | | 3. |
| Sampler Name and/or Signature on COC? | ☐ Yes | ☒ No | ☐ N/A | 4. |
| Samples Arrived within Hold Time? | ☒ Yes | ☐ No | | 5. |
| **Short Hold Time Analysis (<72 hr)?** | ☐ Yes | ☒ No | | 6. |
| **Rush Turn Around Time Requested?** | ☐ Yes | ☒ No | | 7. |
| Sufficient Volume? | ☒ Yes | ☐ No | | 8. |
| Correct Containers Used? | ☒ Yes | ☐ No | | 9. |
| -Pace Containers Used? | ☐ Yes | ☒ No | | |
| Containers Intact? | ☒ Yes | ☐ No | | 10. |
| Filtered Volume Received for Dissolved Tests? | ☐ Yes | ☐ No | ☒ N/A | 11. Note if sediment is visible in the dissolved container |
| Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL | ☐ Yes | ☒ No | | 12. NO DATE ON LABELS & NO TIME ON EITHER COL OR LABELS. |
| All containers needing acid/base preservation have been checked? | ☐ Yes | ☐ No | ☒ N/A | 13. ☐ $HNO_3$ ☐ $H_2SO_4$ ☐ NaOH Positive for Res. Chlorine? Y N Sample # |
| All containers needing preservation are found to be in compliance with EPA recommendation? ($HNO_3$, $H_2SO_4$, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide) | ☐ Yes | ☐ No | ☒ N/A | |
| Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin. | ☐ Yes | ☐ No | ☒ N/A | Initial when completed: Lot # of added preservative: |
| Headspace in VOA Vials ( >6mm)? | ☐ Yes | ☐ No | ☒ N/A | 14. |
| Trip Blank Present? | ☐ Yes | ☐ No | ☒ N/A | 15. |
| Trip Blank Custody Seals Present? | ☐ Yes | ☐ No | ☒ N/A | |
| Pace Trip Blank Lot # (if purchased): | | | | |

**CLIENT NOTIFICATION/RESOLUTION** **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution: Additional volume.

**Project Manager Review:** Joanne Richardson **Date:** 12-21-17

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office ( i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interference present

J = Estimated value

Nn = Value obtained from additional analysis

P = PCDE Interference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = See Discussion



This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

# Appendix B

Sample Analysis  Summary

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-01 | | | |
| Lab Sample ID | 10414791001 | | | |
| Filename | U171227C_09 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.6 g | Matrix | Solid | |
| % Moisture | 5.7 | Dilution | NA | |
| Dry Weight Extracted | 11.9 g | Collected | 12/14/2017 | 10:10 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Extracted | 12/18/2017 | 15:20 |
| Method Blank ID | BLANK-59234 | Analyzed | 12/27/2017 | 23:42 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 62 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 63 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 67 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 70 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 70 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 70 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 69 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 52 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 58 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 49 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 60 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-02 | | | |
| Lab Sample ID | 10414791002 | | | |
| Filename | U171227C_10 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.1 g | Matrix | Solid | |
| % Moisture | 6.1 | Dilution | NA | |
| Dry Weight Extracted | 11.4 g | Collected | 12/14/2017 | 10:15 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Extracted | 12/18/2017 | 15:20 |
| Method Blank ID | BLANK-59234 | Analyzed | 12/28/2017 | 00:26 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 67 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 64 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 67 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 69 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 76 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 66 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 64 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 67 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 67 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 59 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 54 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 66 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-03 | | | |
| Lab Sample ID | 10414791003 | | | |
| Filename | U171227C_11 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.4 g | Matrix | Solid | |
| % Moisture | 8.0 | Dilution | NA | |
| Dry Weight Extracted | 11.4 g | Collected | 12/14/2017 | 10:20 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Extracted | 12/18/2017 | 15:20 |
| Method Blank ID | BLANK-59234 | Analyzed | 12/28/2017 | 01:10 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 72 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 69 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 75 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 74 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 82 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 46 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 48 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 68 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 58 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 65 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 64 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 56 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 44 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 47 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 74 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-04 | | | |
| Lab Sample ID | 10414791004 | | | |
| Filename | U171227C_12 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.4 g | Matrix | Solid | |
| % Moisture | 8.4 | Dilution | NA | |
| Dry Weight Extracted | 11.4 g | Collected | 12/14/2017 | 10:25 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Extracted | 12/18/2017 | 15:20 |
| Method Blank ID | BLANK-59234 | Analyzed | 12/28/2017 | 01:53 |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 65 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 62 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 70 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 71 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 82 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 63 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 63 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 64 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 59 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 61 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 50 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 68 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-05 | | | |
| Lab Sample ID | 10414791005 | | | |
| Filename | U171227C_13 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.5 g | Matrix | Solid | |
| % Moisture | 9.6 | Dilution | NA | |
| Dry Weight Extracted | 11.3 g | Collected | 12/14/2017 | 10:30 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Extracted | 12/18/2017 | 15:20 |
| Method Blank ID | BLANK-59234 | Analyzed | 12/28/2017 | 02:37 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 60 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 66 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 68 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 73 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 61 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 62 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 63 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 58 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 55 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 59 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 54 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 63 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-06 | | | |
| Lab Sample ID | 10414791006 | | | |
| Filename | U171227C_14 | | | |
| Injected By | BAL | | | |
| Total Amount Extracted | 12.5 g | Matrix | Solid | |
| % Moisture | 6.7 | Dilution | NA | |
| Dry Weight Extracted | 11.7 g | Collected | 12/14/2017 | 10:35 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Extracted | 12/18/2017 | 15:20 |
| Method Blank ID | BLANK-59234 | Analyzed | 12/28/2017 | 03:21 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 60 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 66 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 68 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 75 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 61 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 64 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 56 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 54 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 54 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 61 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 53 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 64 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-07 | | | |
| Lab Sample ID | 10414791007 | | | |
| Filename | U171222A_12 | | | |
| Injected By | CVS | | | |
| Total Amount Extracted | 11.7 g | Matrix | Solid | |
| % Moisture | 5.9 | Dilution | NA | |
| Dry Weight Extracted | 11.0 g | Collected | 12/14/2017 | 10:40 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171222A_05 & U171222A_16 | Extracted | 12/19/2017 | 15:00 |
| Method Blank ID | BLANK-59264 | Analyzed | 12/22/2017 | 17:50 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 55 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 53 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 53 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 58 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 59 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 59 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 62 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 58 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 55 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 50 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 55 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 46 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 61 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-08 | | | |
| Lab Sample ID | 10414791008 | | | |
| Filename | U171222A_13 | | | |
| Injected By | CVS | | | |
| Total Amount Extracted | 11.8 g | Matrix | Solid | |
| % Moisture | 1.4 | Dilution | NA | |
| Dry Weight Extracted | 11.6 g | Collected | 12/14/2017 | 10:45 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171222A_05 & U171222A_16 | Extracted | 12/19/2017 | 15:00 |
| Method Blank ID | BLANK-59264 | Analyzed | 12/22/2017 | 18:34 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 64 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 58 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 62 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 66 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 71 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 70 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 72 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 72 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 67 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 66 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 59 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 55 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 66 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-09 | | | |
| Lab Sample ID | 10414791009 | | | |
| Filename | U171222A_14 | | | |
| Injected By | CVS | | | |
| Total Amount Extracted | 11.7 g | Matrix | Solid | |
| % Moisture | 1.3 | Dilution | NA | |
| Dry Weight Extracted | 11.5 g | Collected | 12/14/2017 | 10:50 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171222A_05 & U171222A_16 | Extracted | 12/19/2017 | 15:00 |
| Method Blank ID | BLANK-59264 | Analyzed | 12/22/2017 | 19:18 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 58 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 54 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 56 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 58 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 62 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 65 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 66 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 53 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 65 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 59 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 55 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 63 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 53 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 64 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-10 | | | |
| Lab Sample ID | 10414791010 | | | |
| Filename | U171222A_15 | | | |
| Injected By | CVS | | | |
| Total Amount Extracted | 11.8 g | Matrix | Solid | |
| % Moisture | 2.6 | Dilution | NA | |
| Dry Weight Extracted | 11.5 g | Collected | 12/14/2017 | 10:55 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171222A_05 & U171222A_16 | Extracted | 12/19/2017 | 15:00 |
| Method Blank ID | BLANK-59264 | Analyzed | 12/22/2017 | 20:02 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 63 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 55 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 59 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 59 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 65 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 65 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 67 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 69 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 63 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 62 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 67 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 63 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 63 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Sample Analysis Results

Client - ESS Laboratory

| | | | | |
|---|---|---|---|---|
| Client's Sample ID | 1712347-11 | | | |
| Lab Sample ID | 10414791011 | | | |
| Filename | U171222B_02 | | | |
| Injected By | CVS | | | |
| Total Amount Extracted | 11.9 g | Matrix | Solid | |
| % Moisture | 2.4 | Dilution | NA | |
| Dry Weight Extracted | 11.6 g | Collected | 12/14/2017 | 11:00 |
| ICAL ID | U171222 | Received | 12/16/2017 | 10:40 |
| CCal Filename(s) | U171222A_16 & U171222B_16 | Extracted | 12/19/2017 | 15:00 |
| Method Blank ID | BLANK-59264 | Analyzed | 12/22/2017 | 22:13 |

| Native Isomers | Conc ng/Kg | EMPC ng/Kg | RL ng/Kg | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 59 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 57 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 55 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 57 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 61 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 64 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 64 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 55 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 57 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 57 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 51 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 56 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 49 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 63 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-59234 | Matrix | Solid |
| Filename | F171221A_20 | Dilution | NA |
| Total Amount Extracted | 75.1 g | Extracted | 12/18/2017 15:20 |
| ICAL ID | F171219 | Analyzed | 12/22/2017 00:28 |
| CCal Filename(s) | F171221A_17 & F171221A_24 | Injected By | SMT |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 66 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 63 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 87 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 84 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 87 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 68 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 68 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 73 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 68 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 67 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 60 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 60 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 66 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 44 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 59 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Blank Analysis Results

| | | | |
|---|---|---|---|
| Lab Sample ID | BLANK-59264 | Matrix | Solid |
| Filename | U171222A_11 | Dilution | NA |
| Total Amount Extracted | 15.1 g | Extracted | 12/19/2017 15:00 |
| ICAL ID | U171222 | Analyzed | 12/22/2017 17:06 |
| CCal Filename(s) | U171222A_05 & U171222A_16 | Injected By | CVS |

| **Native Isomers** | **Conc** ng/Kg | **EMPC** ng/Kg | **RL** ng/Kg | **Internal Standards** | **ng's Added** | **Percent Recovery** |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDF-13C | 2.00 | 64 |
| Total TCDF | ND | ----- | 1.0 | 2,3,7,8-TCDD-13C | 2.00 | 61 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 58 |
| 2,3,7,8-TCDD | ND | ----- | 1.0 | 2,3,4,7,8-PeCDF-13C | 2.00 | 58 |
| Total TCDD | ND | ----- | 1.0 | 1,2,3,7,8-PeCDD-13C | 2.00 | 66 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 65 |
| 1,2,3,7,8-PeCDF | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 68 |
| 2,3,4,7,8-PeCDF | ND | ----- | 5.0 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 69 |
| Total PeCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 63 |
| 1,2,3,7,8-PeCDD | ND | ----- | 5.0 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 62 |
| Total PeCDD | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 59 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 53 |
| 1,2,3,4,7,8-HxCDF | ND | ----- | 5.0 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 60 |
| 1,2,3,6,7,8-HxCDF | ND | ----- | 5.0 | OCDD-13C | 4.00 | 50 |
| 2,3,4,6,7,8-HxCDF | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDF | ND | ----- | 5.0 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| Total HxCDF | ND | ----- | 5.0 | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | ND | ----- | 5.0 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 67 |
| 1,2,3,6,7,8-HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,7,8,9-HxCDD | ND | ----- | 5.0 | | | |
| Total HxCDD | ND | ----- | 5.0 | | | |
| 1,2,3,4,6,7,8-HpCDF | ND | ----- | 5.0 | Total 2,3,7,8-TCDD | | |
| 1,2,3,4,7,8,9-HpCDF | ND | ----- | 5.0 | Equivalence: 0.00 ng/Kg | | |
| Total HpCDF | ND | ----- | 5.0 | (Lower-bound - Using MADEP Factors) | | |
| 1,2,3,4,6,7,8-HpCDD | ND | ----- | 5.0 | | | |
| Total HpCDD | ND | ----- | 5.0 | | | |
| OCDF | ND | ----- | 10 | | | |
| OCDD | ND | ----- | 10 | | | |

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

Results reported on a total weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-59235 | | |
| Filename | F171221A_18 | Matrix | Solid |
| Total Amount Extracted | 75.6 g | Dilution | NA |
| ICAL ID | F171219 | Extracted | 12/18/2017 15:20 |
| CCal Filename(s) | F171221A_17 & F171221A_24 | Analyzed | 12/21/2017 23:02 |
| Method Blank ID | BLANK-59234 | Injected By | SMT |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.17 | 87 | 2,3,7,8-TCDF-13C | 2.0 | 82 |
| Total TCDF | | | | 2,3,7,8-TCDD-13C | 2.0 | 79 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.0 | 104 |
| 2,3,7,8-TCDD | 0.20 | 0.18 | 89 | 2,3,4,7,8-PeCDF-13C | 2.0 | 103 |
| Total TCDD | | | | 1,2,3,7,8-PeCDD-13C | 2.0 | 108 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.0 | 81 |
| 1,2,3,7,8-PeCDF | 1.0 | 0.88 | 88 | 1,2,3,6,7,8-HxCDF-13C | 2.0 | 82 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.79 | 79 | 2,3,4,6,7,8-HxCDF-13C | 2.0 | 85 |
| Total PeCDF | | | | 1,2,3,7,8,9-HxCDF-13C | 2.0 | 79 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.0 | 79 |
| 1,2,3,7,8-PeCDD | 1.0 | 0.82 | 82 | 1,2,3,6,7,8-HxCDD-13C | 2.0 | 71 |
| Total PeCDD | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 78 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 72 |
| 1,2,3,4,7,8-HxCDF | 1.0 | 0.85 | 85 | 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 79 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.82 | 82 | OCDD-13C | 4.0 | 53 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.78 | 78 | | | |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.83 | 83 | 1,2,3,4-TCDD-13C | 2.0 | NA |
| Total HxCDF | | | | 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 1,2,3,4,7,8-HxCDD | 1.0 | 0.82 | 82 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 69 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 0.88 | 88 | | | |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.92 | 92 | | | |
| Total HxCDD | | | | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.82 | 82 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.79 | 79 | | | |
| Total HpCDF | | | | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.78 | 78 | | | |
| Total HpCDD | | | | | | |
| OCDF | 2.0 | 1.6 | 79 | | | |
| OCDD | 2.0 | 1.6 | 82 | | | |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Laboratory Control Spike Results

| | | | |
|---|---|---|---|
| Lab Sample ID | LCS-59265 | | |
| Filename | U171222A_07 | Matrix | Solid |
| Total Amount Extracted | 15.2 g | Dilution | NA |
| ICAL ID | U171222 | Extracted | 12/19/2017 15:00 |
| CCal Filename(s) | U171222A_05 & U171222A_16 | Analyzed | 12/22/2017 14:12 |
| Method Blank ID | BLANK-59264 | Injected By | CVS |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. |
|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.18 | 89 |
| Total TCDF | | | |
| 2,3,7,8-TCDD | 0.20 | 0.20 | 98 |
| Total TCDD | | | |
| 1,2,3,7,8-PeCDF | 1.0 | 0.99 | 99 |
| 2,3,4,7,8-PeCDF | 1.0 | 0.88 | 88 |
| Total PeCDF | | | |
| 1,2,3,7,8-PeCDD | 1.0 | 0.87 | 87 |
| Total PeCDD | | | |
| 1,2,3,4,7,8-HxCDF | 1.0 | 1.0 | 100 |
| 1,2,3,6,7,8-HxCDF | 1.0 | 0.91 | 91 |
| 2,3,4,6,7,8-HxCDF | 1.0 | 0.83 | 83 |
| 1,2,3,7,8,9-HxCDF | 1.0 | 0.89 | 89 |
| Total HxCDF | | | |
| 1,2,3,4,7,8-HxCDD | 1.0 | 0.94 | 94 |
| 1,2,3,6,7,8-HxCDD | 1.0 | 1.00 | 100 |
| 1,2,3,7,8,9-HxCDD | 1.0 | 0.91 | 91 |
| Total HxCDD | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.0 | 0.95 | 95 |
| 1,2,3,4,7,8,9-HpCDF | 1.0 | 0.92 | 92 |
| Total HpCDF | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.0 | 0.89 | 89 |
| Total HpCDD | | | |
| OCDF | 2.0 | 1.8 | 91 |
| OCDD | 2.0 | 1.9 | 95 |

| Internal Standards | ng's Added | Percent Recovery |
|---|---|---|
| 2,3,7,8-TCDF-13C | 2.0 | 60 |
| 2,3,7,8-TCDD-13C | 2.0 | 56 |
| 1,2,3,7,8-PeCDF-13C | 2.0 | 54 |
| 2,3,4,7,8-PeCDF-13C | 2.0 | 54 |
| 1,2,3,7,8-PeCDD-13C | 2.0 | 61 |
| 1,2,3,4,7,8-HxCDF-13C | 2.0 | 67 |
| 1,2,3,6,7,8-HxCDF-13C | 2.0 | 74 |
| 2,3,4,6,7,8-HxCDF-13C | 2.0 | 73 |
| 1,2,3,7,8,9-HxCDF-13C | 2.0 | 59 |
| 1,2,3,4,7,8-HxCDD-13C | 2.0 | 66 |
| 1,2,3,6,7,8-HxCDD-13C | 2.0 | 63 |
| 1,2,3,4,6,7,8-HpCDF-13C | 2.0 | 61 |
| 1,2,3,4,7,8,9-HpCDF-13C | 2.0 | 57 |
| 1,2,3,4,6,7,8-HpCDD-13C | 2.0 | 61 |
| OCDD-13C | 4.0 | 48 |
| 1,2,3,4-TCDD-13C | 2.0 | NA |
| 1,2,3,7,8,9-HxCDD-13C | 2.0 | NA |
| 2,3,7,8-TCDD-37Cl4 | 0.20 | 66 |

Qs = Quantity Spiked
Qm = Quantity Measured
Rec. = Recovery (Expressed as Percent)
R = Recovery outside of target range

Y = RF averaging used in calculations
Nn = Value obtained from additional analysis
NA = Not Applicable
* = See Discussion

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712347-01-MS | | |
| Lab Sample ID | 10414791001-MS | | |
| Filename | U171227C_04 | Matrix | Solid |
| Total Amount Extracted | 12.5 g | Dilution | NA |
| ICAL ID | U171222 | Extracted | 12/18/2017 15:20 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Analyzed | 12/27/2017 20:02 |
| Method Blank ID | BLANK-59234 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.17 | 86 | 2,3,7,8-TCDF-13C | 2.00 | 62 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 60 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 63 |
| 2,3,7,8-TCDD | 0.20 | 0.19 | 94 | 2,3,4,7,8-PeCDF-13C | 2.00 | 64 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 70 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 59 |
| 1,2,3,7,8-PeCDF | 1.00 | 0.90 | 90 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 59 |
| 2,3,4,7,8-PeCDF | 1.00 | 0.81 | 81 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 62 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 60 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 59 |
| 1,2,3,7,8-PeCDD | 1.00 | 0.85 | 85 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 56 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 56 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 60 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 0.90 | 90 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 61 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.89 | 89 | OCDD-13C | 4.00 | 56 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.79 | 79 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.84 | 84 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 0.89 | 89 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 58 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.92 | 92 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.96 | 96 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 0.90 | 90 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 0.83 | 83 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 0.82 | 82 | | | |
| OCDF | 2.00 | 1.79 | 90 | | | |
| OCDD | 2.00 | 1.79 | 89 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spiked Sample Report

Client - ESS Laboratory

| | | | |
|---|---|---|---|
| Client's Sample ID | 1712347-01-MSD | | |
| Lab Sample ID | 10414791001-MSD | | |
| Filename | U171227C_05 | Matrix | Solid |
| Total Amount Extracted | 12.5 g | Dilution | NA |
| ICAL ID | U171222 | Extracted | 12/18/2017 15:20 |
| CCal Filename(s) | U171227C_01 & U171227C_19 | Analyzed | 12/27/2017 20:46 |
| Method Blank ID | BLANK-59234 | Injected By | BAL |

| Native Isomers | Qs (ng) | Qm (ng) | % Rec. | Internal Standards | ng's Added | Percent Recovery |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.20 | 0.17 | 86 | 2,3,7,8-TCDF-13C | 2.00 | 90 |
| | | | | 2,3,7,8-TCDD-13C | 2.00 | 82 |
| | | | | 1,2,3,7,8-PeCDF-13C | 2.00 | 86 |
| 2,3,7,8-TCDD | 0.20 | 0.20 | 100 | 2,3,4,7,8-PeCDF-13C | 2.00 | 86 |
| | | | | 1,2,3,7,8-PeCDD-13C | 2.00 | 95 |
| | | | | 1,2,3,4,7,8-HxCDF-13C | 2.00 | 78 |
| 1,2,3,7,8-PeCDF | 1.00 | 0.93 | 93 | 1,2,3,6,7,8-HxCDF-13C | 2.00 | 77 |
| 2,3,4,7,8-PeCDF | 1.00 | 0.83 | 83 | 2,3,4,6,7,8-HxCDF-13C | 2.00 | 80 |
| | | | | 1,2,3,7,8,9-HxCDF-13C | 2.00 | 76 |
| | | | | 1,2,3,4,7,8-HxCDD-13C | 2.00 | 80 |
| 1,2,3,7,8-PeCDD | 1.00 | 0.88 | 88 | 1,2,3,6,7,8-HxCDD-13C | 2.00 | 75 |
| | | | | 1,2,3,4,6,7,8-HpCDF-13C | 2.00 | 70 |
| | | | | 1,2,3,4,7,8,9-HpCDF-13C | 2.00 | 70 |
| 1,2,3,4,7,8-HxCDF | 1.00 | 0.87 | 87 | 1,2,3,4,6,7,8-HpCDD-13C | 2.00 | 76 |
| 1,2,3,6,7,8-HxCDF | 1.00 | 0.86 | 86 | OCDD-13C | 4.00 | 65 |
| 2,3,4,6,7,8-HxCDF | 1.00 | 0.81 | 81 | | | |
| 1,2,3,7,8,9-HxCDF | 1.00 | 0.85 | 85 | 1,2,3,4-TCDD-13C | 2.00 | NA |
| | | | | 1,2,3,7,8,9-HxCDD-13C | 2.00 | NA |
| 1,2,3,4,7,8-HxCDD | 1.00 | 0.87 | 87 | 2,3,7,8-TCDD-37Cl4 | 0.20 | 79 |
| 1,2,3,6,7,8-HxCDD | 1.00 | 0.94 | 94 | | | |
| 1,2,3,7,8,9-HxCDD | 1.00 | 0.89 | 89 | | | |
| 1,2,3,4,6,7,8-HpCDF | 1.00 | 0.92 | 92 | | | |
| 1,2,3,4,7,8,9-HpCDF | 1.00 | 0.86 | 86 | | | |
| 1,2,3,4,6,7,8-HpCDD | 1.00 | 0.82 | 82 | | | |
| OCDF | 2.00 | 1.73 | 87 | | | |
| OCDD | 2.00 | 1.81 | 90 | | | |

Qs = Quantity Spiked  Qm = Quantity Measured  Rec. = Recovery (Expressed as Percent)

Results reported on a dry weight basis and are valid to no more than 2 significant figures.

## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

# Method 8290 Spike Sample Results

Client - ESS Laboratory

| | | | | | |
|---|---|---|---|---|---|
| Client Sample ID | 1712347-01 | | | Dry Weights | |
| Lab Sample ID | 10414791001 | Sample Filename | U171227C_09 | Sample Amount | 11.9 g |
| MS ID | 10414791001-MS | MS Filename | U171227C_04 | MS Amount | 11.8 g |
| MSD ID | 10414791001-MSD | MSD Filename | U171227C_05 | MSD Amount | 11.8 g |

| Analyte | Sample Conc. ng/Kg | MS/MSD Qs (ng) | MS Qm (ng) | MSD Qm (ng) | RPD | Background Subtracted MS % Rec. | MSD % Rec. | RPD |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDF | 0.000 | 0.20 | 0.17 | 0.17 | 0.2 | 86 | 86 | 0.2 |
| 2,3,7,8-TCDD | 0.000 | 0.20 | 0.19 | 0.20 | 6.2 | 94 | 100 | 6.2 |
| 1,2,3,7,8-PeCDF | 0.000 | 1.00 | 0.90 | 0.93 | 3.2 | 90 | 93 | 3.2 |
| 2,3,4,7,8-PeCDF | 0.000 | 1.00 | 0.81 | 0.83 | 2.2 | 81 | 83 | 2.2 |
| 1,2,3,7,8-PeCDD | 0.000 | 1.00 | 0.85 | 0.88 | 3.0 | 85 | 88 | 3.0 |
| 1,2,3,4,7,8-HxCDF | 0.000 | 1.00 | 0.90 | 0.87 | 3.9 | 90 | 87 | 3.9 |
| 1,2,3,6,7,8-HxCDF | 0.000 | 1.00 | 0.89 | 0.86 | 2.5 | 89 | 86 | 2.5 |
| 2,3,4,6,7,8-HxCDF | 0.000 | 1.00 | 0.79 | 0.81 | 2.4 | 79 | 81 | 2.4 |
| 1,2,3,7,8,9-HxCDF | 0.000 | 1.00 | 0.84 | 0.85 | 1.4 | 84 | 85 | 1.4 |
| 1,2,3,4,7,8-HxCDD | 0.000 | 1.00 | 0.89 | 0.87 | 2.8 | 89 | 87 | 2.8 |
| 1,2,3,6,7,8-HxCDD | 0.000 | 1.00 | 0.92 | 0.94 | 1.7 | 92 | 94 | 1.7 |
| 1,2,3,7,8,9-HxCDD | 0.000 | 1.00 | 0.96 | 0.89 | 7.8 | 96 | 89 | 7.8 |
| 1,2,3,4,6,7,8-HpCDF | 0.000 | 1.00 | 0.90 | 0.92 | 1.6 | 90 | 91 | 1.6 |
| 1,2,3,4,7,8,9-HpCDF | 0.000 | 1.00 | 0.83 | 0.86 | 2.7 | 83 | 86 | 2.7 |
| 1,2,3,4,6,7,8-HpCDD | 0.000 | 1.00 | 0.82 | 0.82 | 0.2 | 81 | 81 | 0.2 |
| OCDF | 0.000 | 2.00 | 1.79 | 1.73 | 3.2 | 90 | 87 | 3.2 |
| OCDD | 0.000 | 2.00 | 1.79 | 1.81 | 1.3 | 88 | 89 | 1.3 |

**Definitions**

MS = Matrix Spike
MSD = Matrix Spike Duplicate
Qm = Quantity Measured
Qs = Quantity Spiked
% Rec. = Percent Recovery
RPD = Relative Percent Difference
NA = Not Applicable
NC = Not Calculated

CDD = Chlorinated dibenzo-p-dioxin
CDF = Chlorinated dibenzo-p-furan
T = Tetra
Pe = Penta
Hx = Hexa
Hp = Hepta
O = Octa

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs: 7,9,10,11
    Analysis: Dioxin
    TAT: 5 day
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

Added 2oz to Samples 7,9,10,11, split samples for Sub work
[illegible] 12/20/17

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 190932 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 190955 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190956 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190979 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190980 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190992 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 190931 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 190953 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190954 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190977 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190978 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190991 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 190930 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 190951 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190952 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190975 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190976 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190990 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 04 | 190929 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 190949 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190950 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190973 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190974 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190989 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 05 | 190928 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 190947 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190948 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190971 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190972 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190988 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 190927 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 190945 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190946 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190969 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190970 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190987 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 190926 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 190943 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190944 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190967 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190968 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190986 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 192267 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 08 | 190925 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 190941 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190942 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190965 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190966 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190985 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 190924 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 190939 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190940 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190963 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190964 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190984 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 192266 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 10 | 190923 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 190937 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190938 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190961 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190962 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190983 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 192265 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 11 | 190922 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 11 | 190935 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190936 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190959 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190960 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190982 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 11 | 192264 | Yes | NA | Yes | 2 oz. Jar - Unpres | NP |
| 12 | 190921 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 12 | 191059 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |

2nd Review

Are barcode labels on correct containers? (Yes) No

Completed By: [signature] Date & Time: 12/20/17 1451

Reviewed By: [signature] Date & Time: 12/22/17 1520

Delivered By: [signature] 12/20/17 1521

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712347
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No
    ESS Sample IDs: **1--11**
    Analysis: **Dioxin, Grain size, Classification, Moisture content**
    TAT: **5 day**
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: ____ Time: ____ By: ____
    b. Low Level VOA vials frozen: Date: 12/14/17 Time: 1820 By: [illegible]

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / (No)
    Who was contacted? ____ Date: ____ Time: ____ By: ____

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 190932 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 190955 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190956 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 190979 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190980 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 190992 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 190931 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 190953 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190954 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 190977 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190978 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 190991 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 190930 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 190951 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190952 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 190975 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190976 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 190990 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 04 | 190929 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 190949 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190950 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 04 | 190973 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190974 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 04 | 190989 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712347

Date Received: 12/14/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 05 | 190928 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 190947 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190948 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 190971 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190972 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 190988 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 190927 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 190945 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190946 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 190969 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190970 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 190987 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 190926 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 190943 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190944 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 190967 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190968 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 190986 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 190925 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 190941 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190942 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 190965 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190966 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 190985 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 190924 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 190939 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190940 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 190963 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190964 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 190984 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 190923 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 190937 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190938 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 190961 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190962 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 190983 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 11 | 190922 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 11 | 190935 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190936 | Yes | NA | Yes | VOA Vial - Other | Other |
| 11 | 190959 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190960 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 11 | 190982 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 12 | 190921 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 12 | 191059 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/14/17 1735

Reviewed By: _____ Date & Time: 12/14/17 1817

Delivered By: _____ 12/14/17 1817

Changes made 12/15/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712347 |
| Turn Time | 5-Day Rush |
| Reporting Limits | S-1 |
| Regulatory State | |
| Electonic Deliverables | ☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →) |

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 11 | 12/14/17 | 10:10 AM | Grab | Soil | Type C - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 2 | 02 12 | 12/14/17 | 10:15 AM | Grab | Soil | Type C - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 03 13 | 12/14/17 | 10:20 AM | Grab | Soil | Type C - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 4 | 04 14 | 12/14/17 | 10:25 AM | Grab | Soil | Type C - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 5 | 05 15 | 12/14/17 | 10:30 AM | Grab | Soil | Type C - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 6 | 06 16 | 12/14/17 | 10:35 AM | Grab | Soil | Type C - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | 07 17 | 12/14/17 | 10:40 AM | Grab | Soil | Type C - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 8 | 08 18 | 12/14/17 | 10:45 AM | Grab | Soil | Type B - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X |
| 9 | 09 19 | 12/14/17 | 10:50 AM | Grab | Soil | Type B - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 10 20 | 12/14/17 | 10:55 AM | Grab | Soil | Type B - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim 12 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Gradation on A 1st. Then, proceed analytical & gradation B & C

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [illegible] 12/14 | J Byrne 12/14/17 12pm | J Byrne 12/14/17 15:34 | [illegible] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS | | | |

Changes made 12/15/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

ESS Lab # 1712347

Turn Time 5-Day Rush

Regulatory State

Is this project for any of the following?: ○CT RCP ◉MA MCP ○RGP

Reporting Limits S-1

Electonic Deliverables ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →)

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 01 ~~01~~ | 12/14/17 | 11:00 AM | Grab | Soil | Type B - Capping Sand - 004 | X | X | X | X | X | X | X | X | ~~X~~ | ~~X~~ | ~~X~~ |
| 12 | 02 ~~02~~ | 12/14/17 | | Grab | Soil | TB Vials | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Container Type:** | AC-Air Cassette | AG-Amber Glass | B-BOD Bottle | C-Cubitainer | G - Glass | O-Other | P-Poly | S-Sterile | V-Vial | | |
| **Container Volume:** | 1-100 mL | 2-2.5 gal | 3-250 mL | 4-300 mL | 5-500 mL | 6-1L | 7-VOA | 8-2 oz | 9-4 oz | 10-8 oz | 11-Other* |
| **Preservation Code:** | 1-Non Preserved | 2-HCl | 3-H2SO4 | 4-HNO3 | 5-NaOH | 6-Methanol | 7-Na2S2O3 | 8-ZnAce, NaOH | 9-NH4Cl | 10-DI H2O | 11-Other* |
| | | | | | | | | | | | **Number of Containers per Sample:** |

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/14 | [signature] 12/14/17 12pm | [signature] 12/14/17 15:34 | [signature] 12/14/17 1543 |
| **Relinquished by: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** | **Relinquished By: (Signature, Date & Time)** | **Received By: (Signature, Date & Time)** |
| Devon Walton SPS | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712347 |
| Turn Time | 5-Day Rush |
| Reporting Limits | S-1 |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 11 | 12/14/17 | 10:10 AM | Grab | Soil | Type C - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 2 | 02 12 | 12/14/17 | 10:15 AM | Grab | Soil | Type C - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 03 13 | 12/14/17 | 10:20 AM | Grab | Soil | Type C - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 4 | 04 14 | 12/14/17 | 10:25 AM | Grab | Soil | Type C - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 5 | 05 15 | 12/14/17 | 10:30 AM | Grab | Soil | Type C - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 6 | 06 16 | 12/14/17 | 10:35 AM | Grab | Soil | Type C - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | 07 17 | 12/14/17 | 10:40 AM | Grab | Soil | Type C - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 8 | 08 18 | 12/14/17 | 10:45 AM | Grab | Soil | Type B - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X |
| 9 | 09 19 | 12/14/17 | 10:50 AM | Grab | Soil | Type B - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 10 20 | 12/14/17 | 10:55 AM | Grab | Soil | Type B - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim 12 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st. Then, proceed analytical & gradation B & C

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [illegible] 12/14 | J Byrne 12/14/17 12pm | J Byrne 12/14/17 15:34 | [illegible] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712347 |
| Turn Time | 5-Day Rush |
| Reporting Limits | S-1 |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | 01 21 | 12/14/17 | 11:00 AM | Grab | Soil | Type B - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 12 | 02 22 | 12/14/17 | | Grab | Soil | TB Vials | | | | | | | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

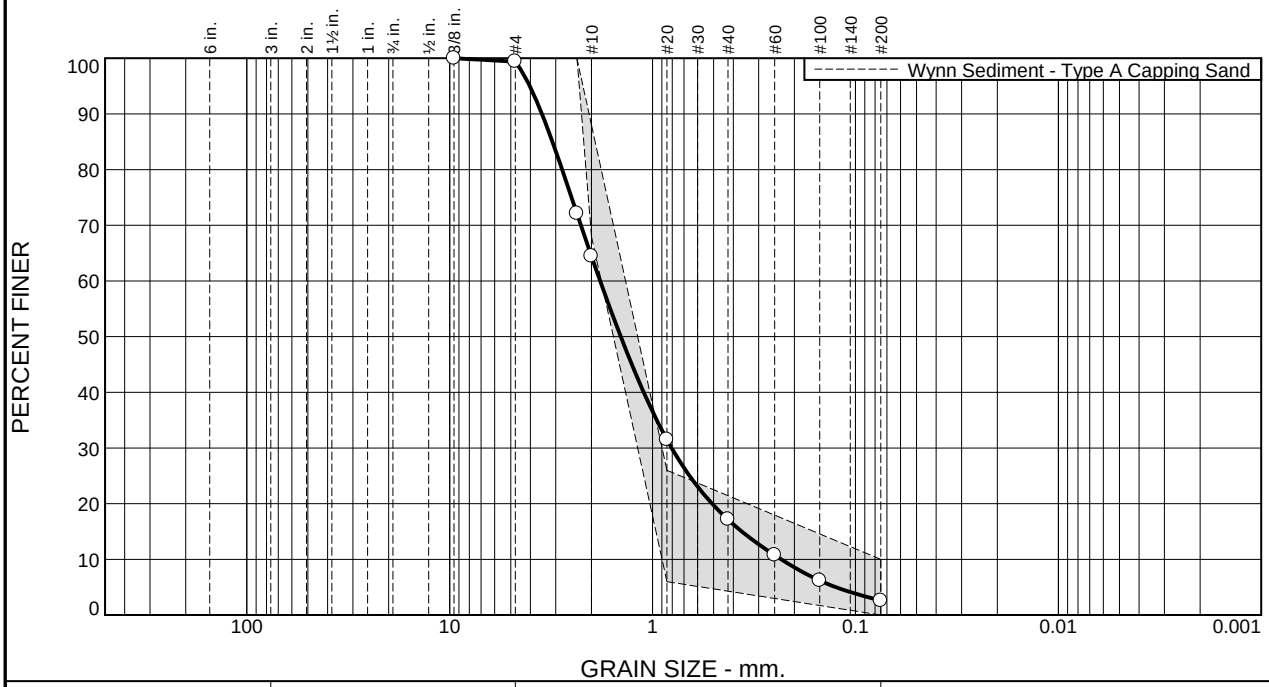
**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then proceed analytical & gradation B&C.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 12/14 | 12/14/17 12pm | 12/14/17 15:34 | 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Walton SPS | | | |

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.6 | 35.0 | 47.2 | 14.6 | 2.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.4 | | |
| #8 | 72.1 | 100.0 | X |
| #10 | 64.4 | 68.0 - 88.0 | X |
| #20 | 31.5 | 6.0 - 26.0 | X |
| #40 | 17.2 | | |
| #60 | 10.7 | | |
| #100 | 6.2 | | |
| #200 | 2.6 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5083 $D_{85}$= 3.1149 $D_{60}$= 1.8129
$D_{50}$= 1.4351 $D_{30}$= 0.8053 $D_{15}$= 0.3630
$D_{10}$= 0.2324 $C_u$= 7.80 $C_c$= 1.54

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

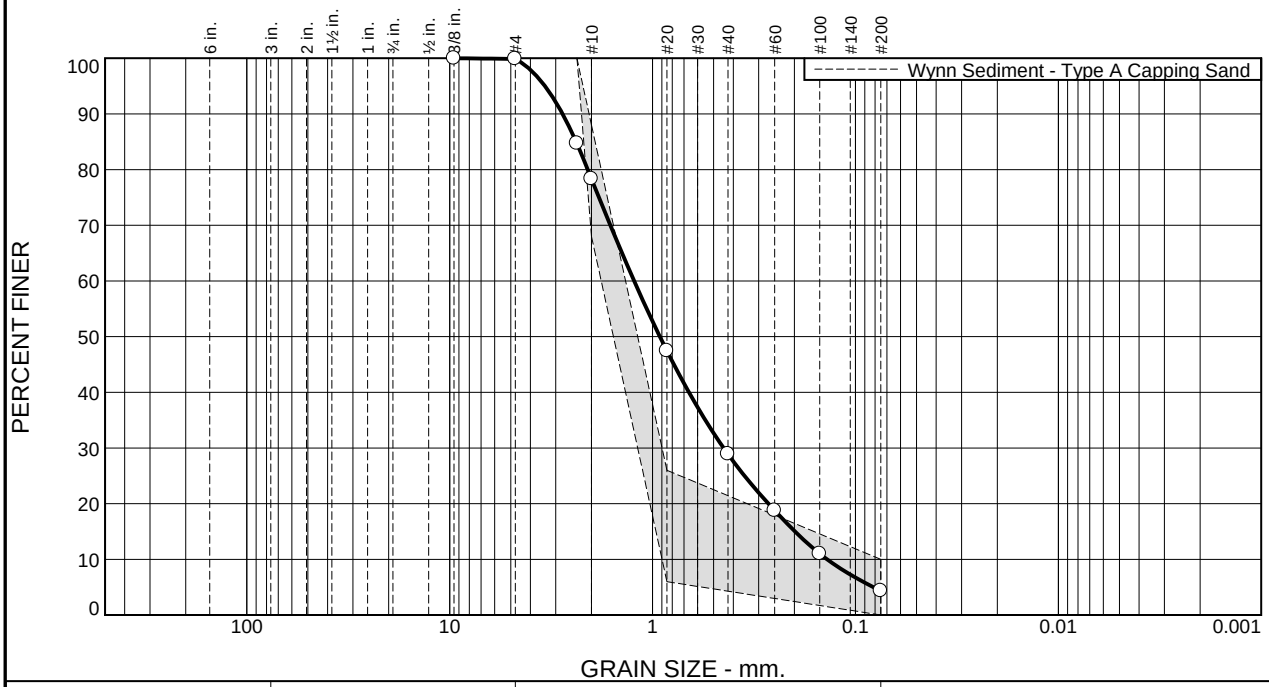
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 002

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.1 | 21.6 | 49.4 | 24.6 | 4.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.9 | | |
| #8 | 84.7 | 100.0 | X |
| #10 | 78.3 | 68.0 - 88.0 | |
| #20 | 47.5 | 6.0 - 26.0 | X |
| #40 | 28.9 | | |
| #60 | 18.8 | | |
| #100 | 11.0 | | |
| #200 | 4.3 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 2.7762 $D_{85}$= 2.3800 $D_{60}$= 1.2324
$D_{50}$= 0.9202 $D_{30}$= 0.4464 $D_{15}$= 0.1986
$D_{10}$= 0.1381 $C_u$= 8.93 $C_c$= 1.17

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

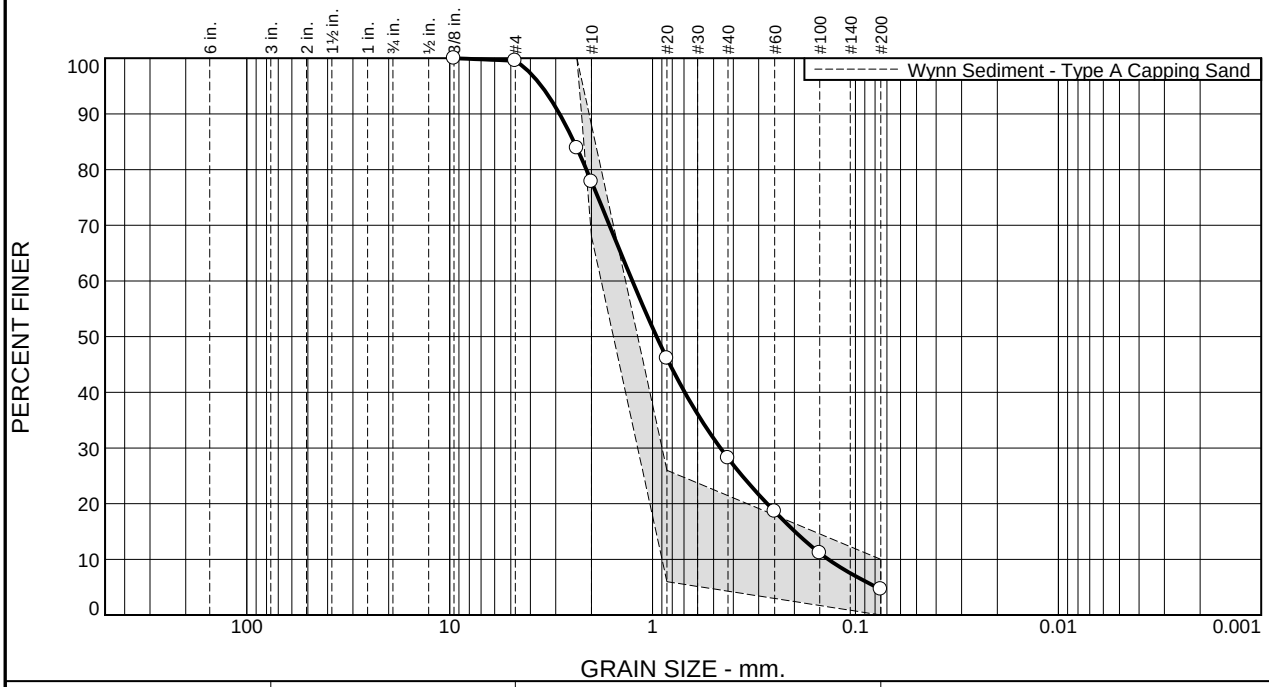
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 003

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.5 | 21.7 | 49.6 | 23.6 | 4.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.5 | | |
| #8 | 83.9 | 100.0 | X |
| #10 | 77.8 | 68.0 - 88.0 | |
| #20 | 46.1 | 6.0 - 26.0 | X |
| #40 | 28.2 | | |
| #60 | 18.6 | | |
| #100 | 11.1 | | |
| #200 | 4.6 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 2.8723 $D_{85}$= 2.4402 $D_{60}$= 1.2578
$D_{50}$= 0.9553 $D_{30}$= 0.4631 $D_{15}$= 0.1989
$D_{10}$= 0.1361 $C_u$= 9.24 $C_c$= 1.25

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

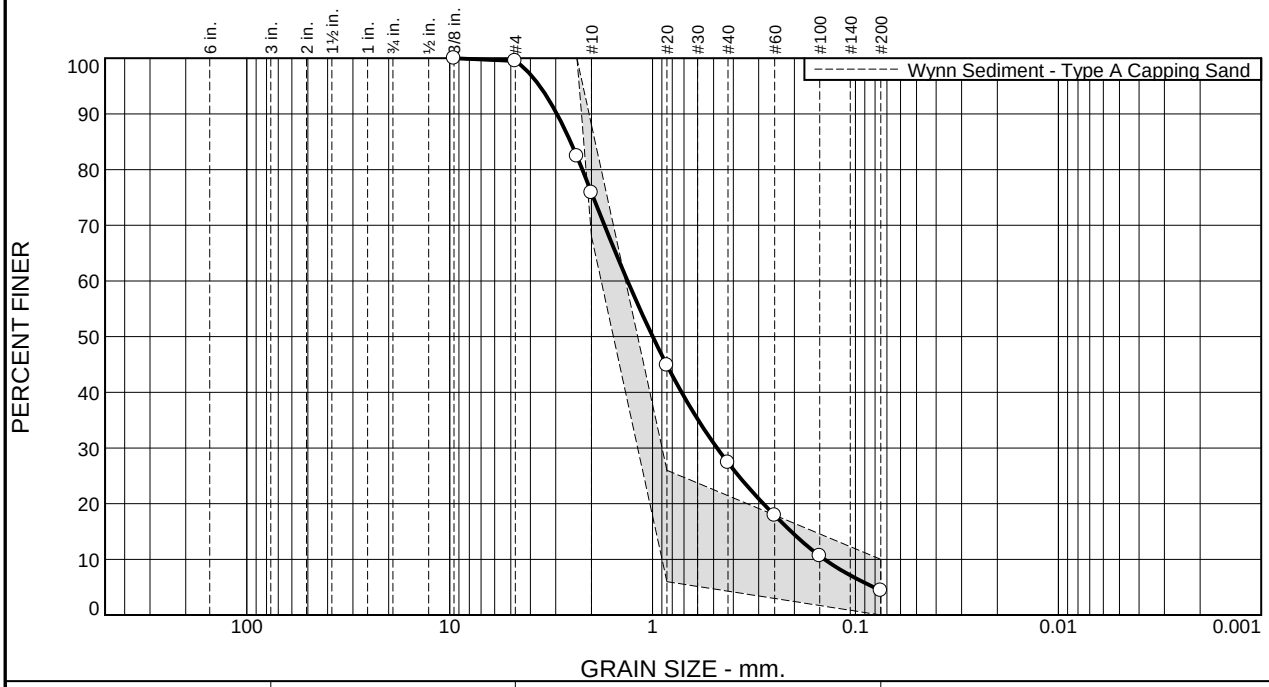
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 004

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.5 | 23.7 | 48.4 | 23.0 | 4.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.5 | | |
| #8 | 82.4 | 100.0 | X |
| #10 | 75.8 | 68.0 - 88.0 | |
| #20 | 44.9 | 6.0 - 26.0 | X |
| #40 | 27.4 | | |
| #60 | 17.9 | | |
| #100 | 10.6 | | |
| #200 | 4.4 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 2.9604 $D_{85}$= 2.5356 $D_{60}$= 1.3276
$D_{50}$= 0.9982 $D_{30}$= 0.4811 $D_{15}$= 0.2074
$D_{10}$= 0.1423 $C_u$= 9.33 $C_c$= 1.23

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

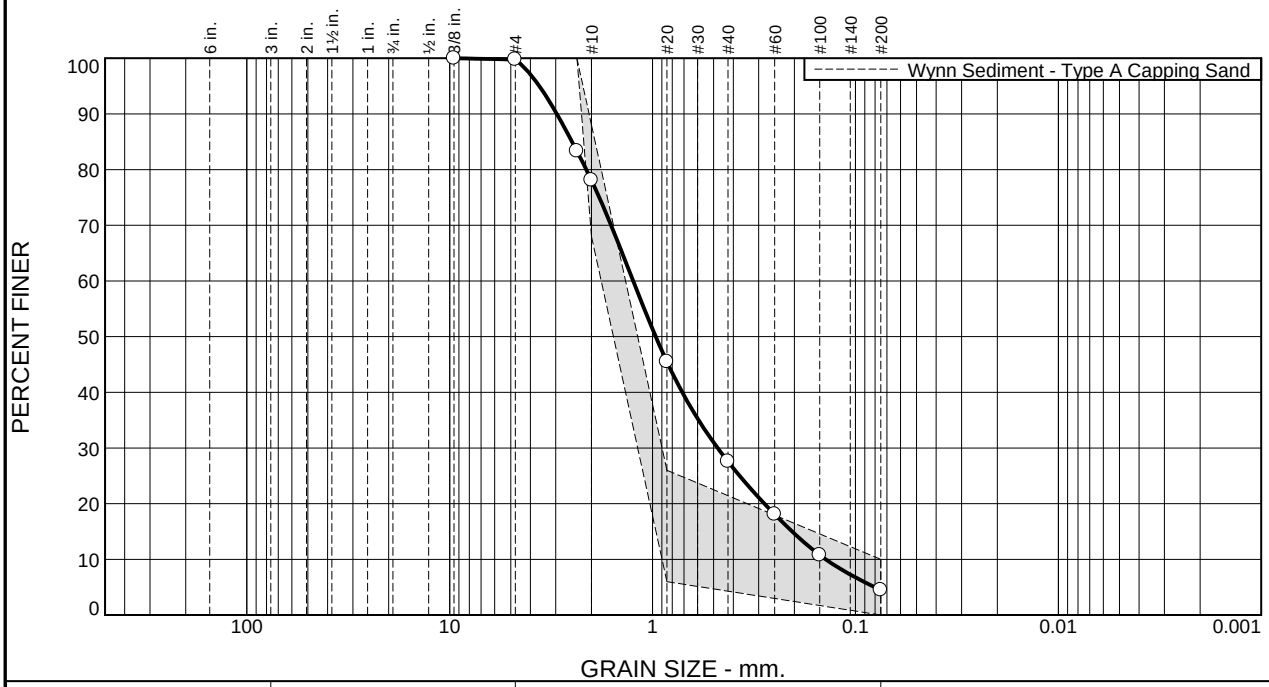
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 005

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.2 | 21.7 | 50.5 | 23.1 | 4.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.8 | | |
| #8 | 83.3 | 100.0 | X |
| #10 | 78.1 | 68.0 - 88.0 | |
| #20 | 45.5 | 6.0 - 26.0 | X |
| #40 | 27.6 | | |
| #60 | 18.1 | | |
| #100 | 10.8 | | |
| #200 | 4.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 2.9635 $D_{85}$= 2.4941 $D_{60}$= 1.2461
$D_{50}$= 0.9649 $D_{30}$= 0.4777 $D_{15}$= 0.2052
$D_{10}$= 0.1402 $C_u$= 8.89 $C_c$= 1.31

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

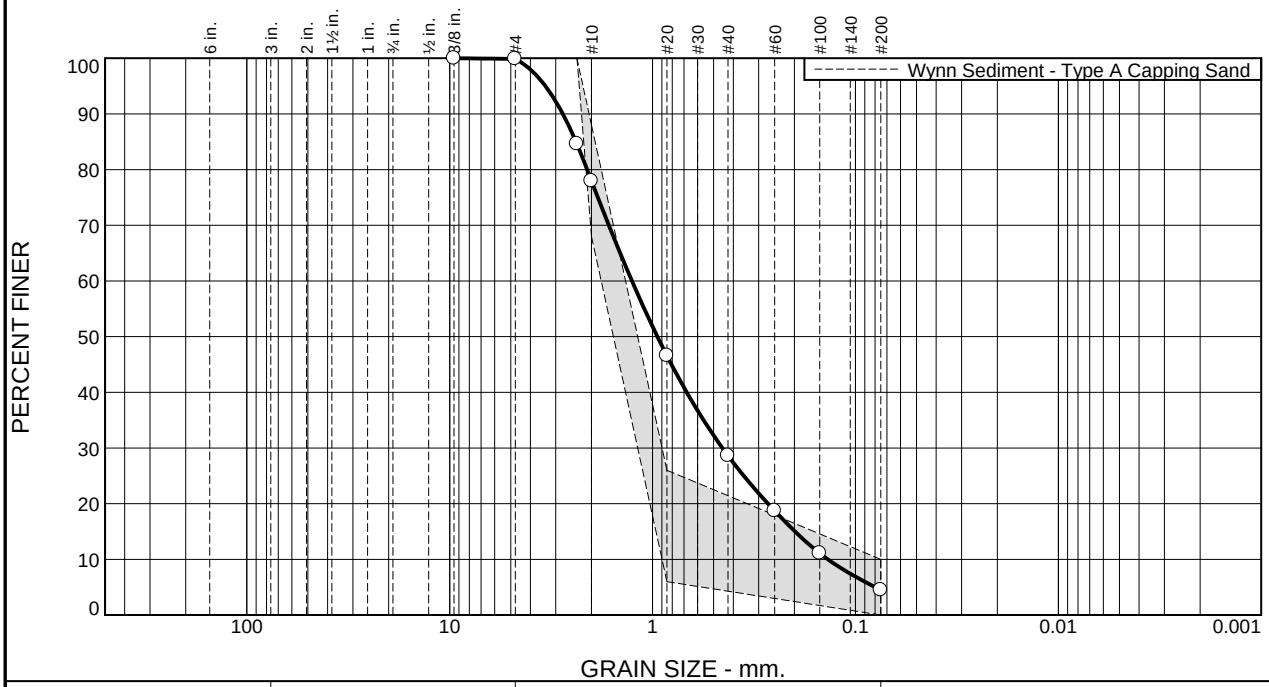
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 006

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.1 | 22.0 | 49.3 | 24.1 | 4.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.9 | | |
| #8 | 84.6 | 100.0 | X |
| #10 | 77.9 | 68.0 - 88.0 | |
| #20 | 46.6 | 6.0 - 26.0 | X |
| #40 | 28.6 | | |
| #60 | 18.7 | | |
| #100 | 11.1 | | |
| #200 | 4.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 2.7673 $D_{85}$= 2.3837 $D_{60}$= 1.2635
$D_{50}$= 0.9466 $D_{30}$= 0.4528 $D_{15}$= 0.1987
$D_{10}$= 0.1369 $C_u$= 9.23 $C_c$= 1.19

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

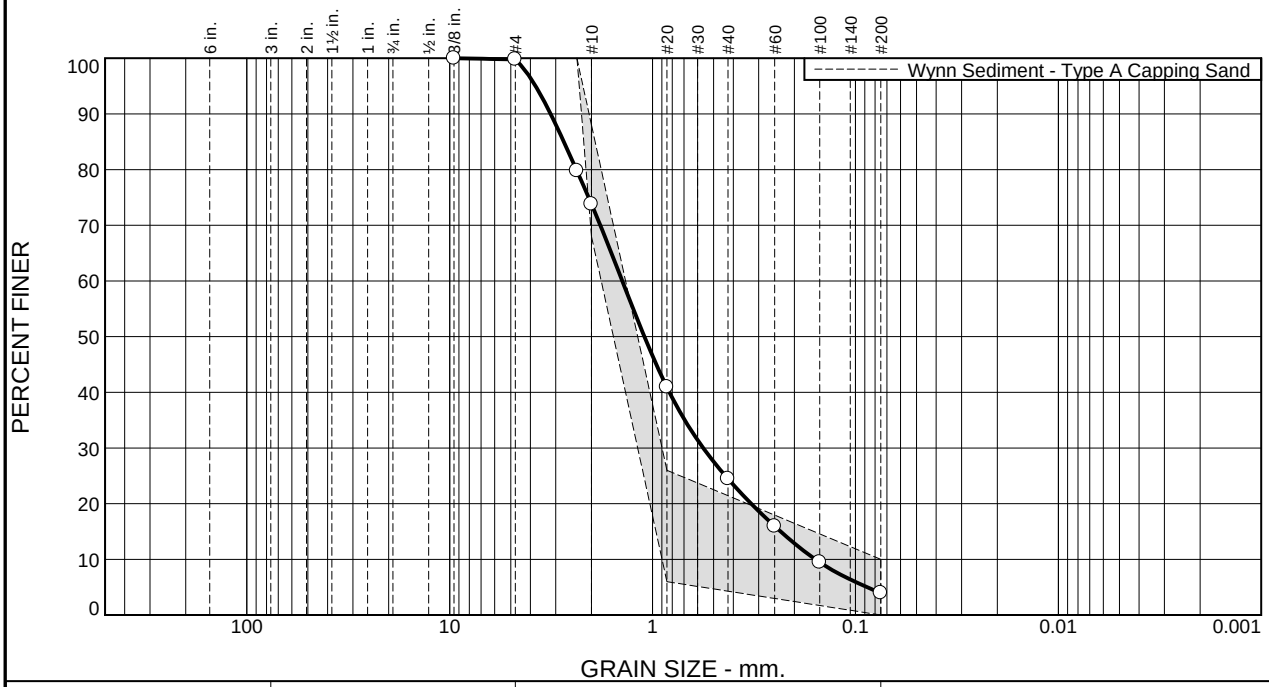
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 007

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.2 | 26.0 | 49.3 | 20.5 | 4.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.8 | | |
| #8 | 79.8 | 100.0 | X |
| #10 | 73.8 | 68.0 - 88.0 | |
| #20 | 40.9 | 6.0 - 26.0 | X |
| #40 | 24.5 | | |
| #60 | 15.9 | | |
| #100 | 9.5 | | |
| #200 | 4.0 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.1785 $D_{85}$= 2.7373 $D_{60}$= 1.4102
$D_{50}$= 1.0970 $D_{30}$= 0.5628 $D_{15}$= 0.2340
$D_{10}$= 0.1577 $C_u$= 8.94 $C_c$= 1.42

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

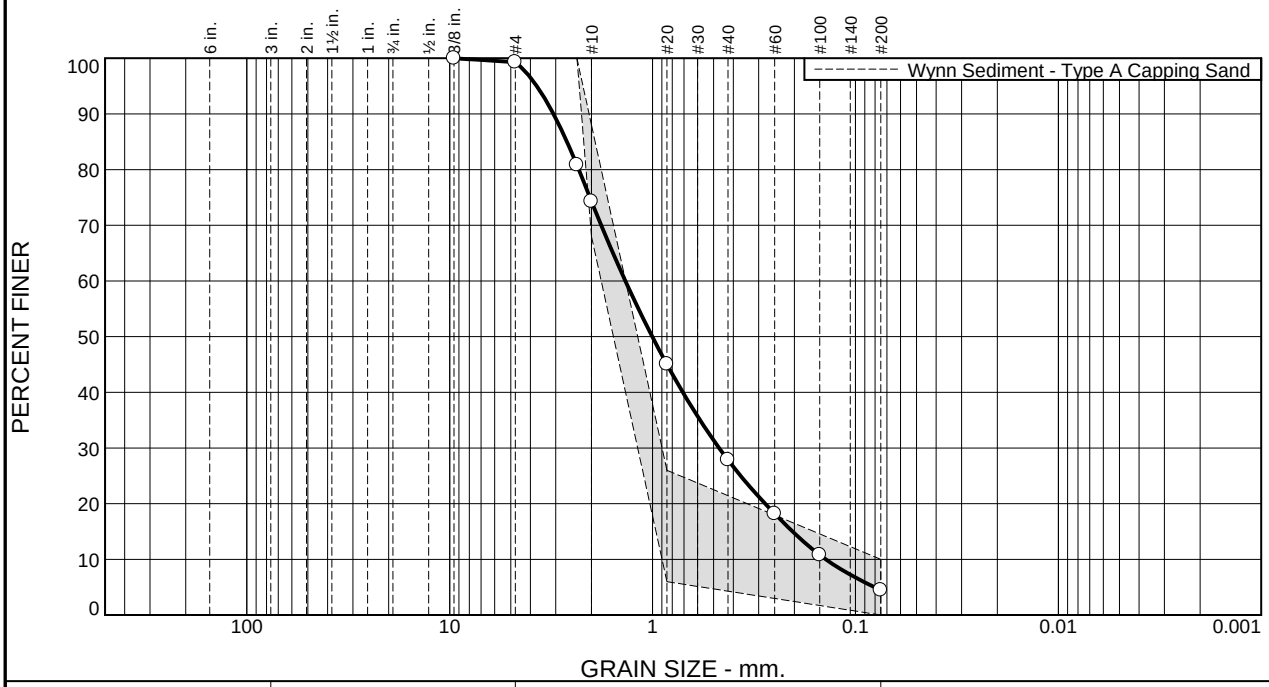
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type A - 008

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.7 | 25.0 | 46.4 | 23.4 | 4.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.3 | | |
| #8 | 80.8 | 100.0 | X |
| #10 | 74.3 | 68.0 - 88.0 | |
| #20 | 45.0 | 6.0 - 26.0 | X |
| #40 | 27.9 | | |
| #60 | 18.2 | | |
| #100 | 10.8 | | |
| #200 | 4.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.0799 $D_{85}$= 2.6420 $D_{60}$= 1.3616
$D_{50}$= 1.0035 $D_{30}$= 0.4699 $D_{15}$= 0.2042
$D_{10}$= 0.1402 $C_u$= 9.71 $C_c$= 1.16

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17

**Sample Number:** Type A - 009

**Thielsch Engineering Inc.**

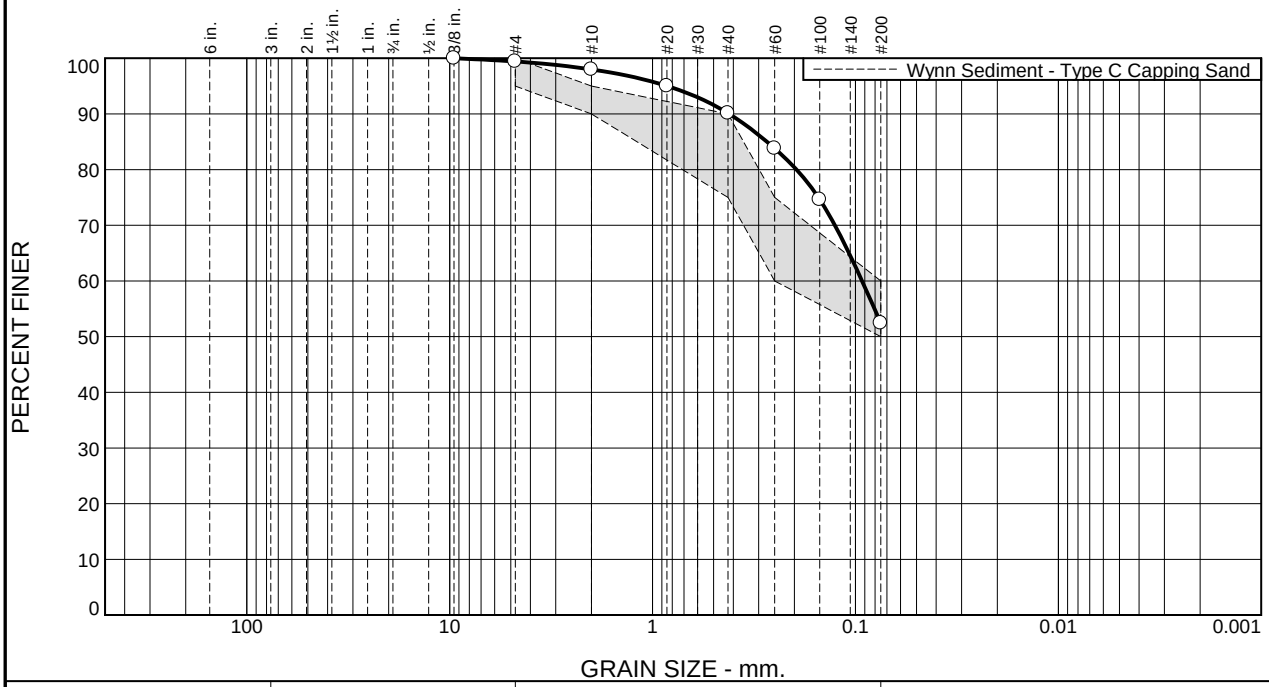
**Cranston, RI**

**Client:** ESS / Charter Contracting

**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA

**Project No:** 1711725 **Figure** 1711725-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.6 | 1.4 | 7.9 | 37.7 | 52.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.4 | 95.0 - 100.0 | |
| #10 | 98.0 | 90.0 - 95.0 | X |
| #20 | 95.0 | | |
| #40 | 90.1 | 75.0 - 90.0 | X |
| #60 | 83.8 | 60.0 - 75.0 | X |
| #100 | 74.6 | | |
| #200 | 52.4 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt (ML)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 0.4190 $D_{85}$= 0.2733 $D_{60}$= 0.0928
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

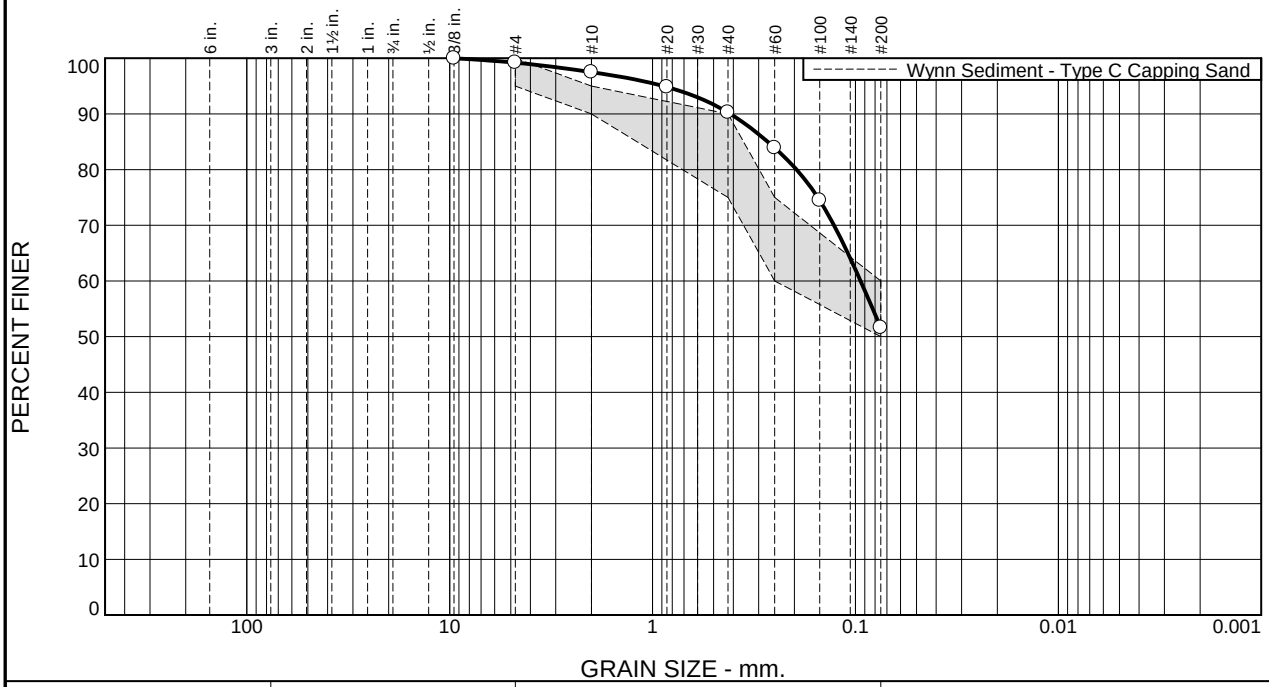
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type C - 002

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.8 | 1.7 | 7.2 | 38.7 | 51.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.2 | 95.0 - 100.0 | |
| #10 | 97.5 | 90.0 - 95.0 | X |
| #20 | 94.8 | | |
| #40 | 90.3 | 75.0 - 90.0 | X |
| #60 | 83.9 | 60.0 - 75.0 | X |
| #100 | 74.5 | | |
| #200 | 51.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt (ML)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 0.4138 $D_{85}$= 0.2708 $D_{60}$= 0.0944
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 11/29/17 **Date Tested:** 12/1/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

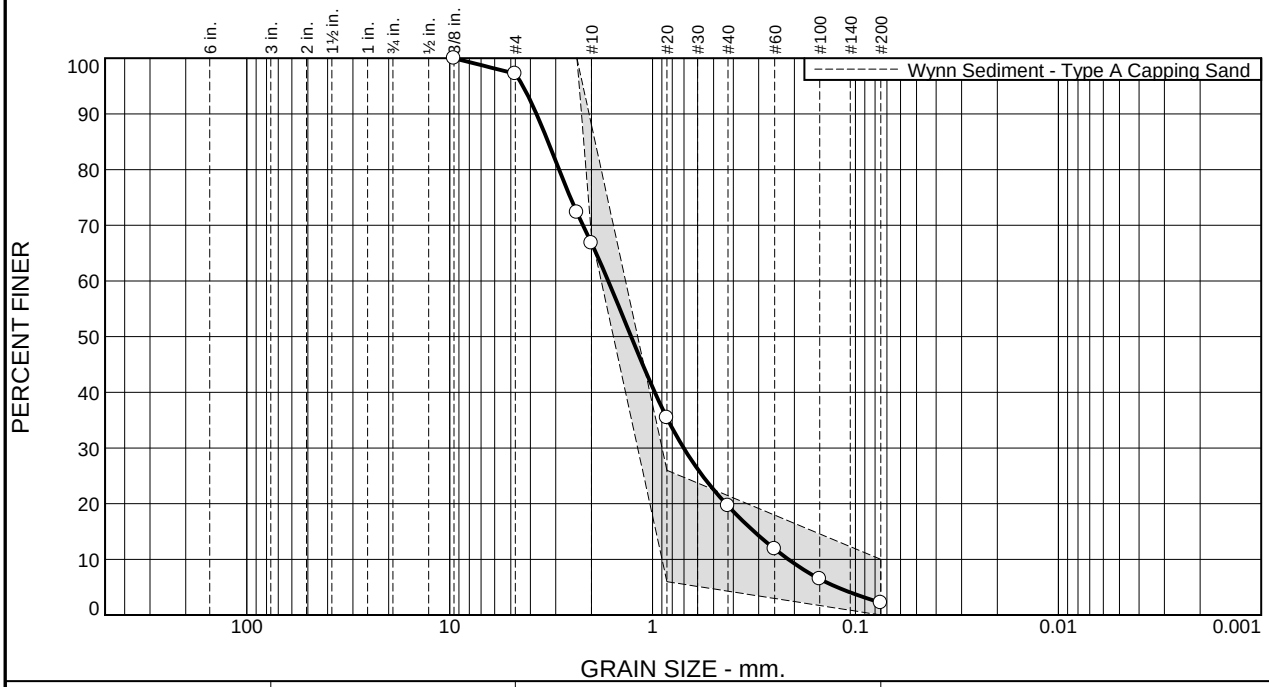
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/28/17
**Sample Number:** Type C - 003

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711725 **Figure** 1711725-10

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.8 | 30.4 | 47.2 | 17.4 | 2.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 97.2 | | |
| #8 | 72.3 | 100.0 | X |
| #10 | 66.8 | 68.0 - 88.0 | X |
| #20 | 35.4 | 6.0 - 26.0 | X |
| #40 | 19.6 | | |
| #60 | 11.9 | | |
| #100 | 6.5 | | |
| #200 | 2.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.7338 $D_{85}$= 3.2740 $D_{60}$= 1.6542
$D_{50}$= 1.2753 $D_{30}$= 0.7025 $D_{15}$= 0.3160
$D_{10}$= 0.2140 $C_u$= 7.73 $C_c$= 1.39

**Remarks**

**Date Received:** 12/1/17 **Date Tested:** 12/5/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

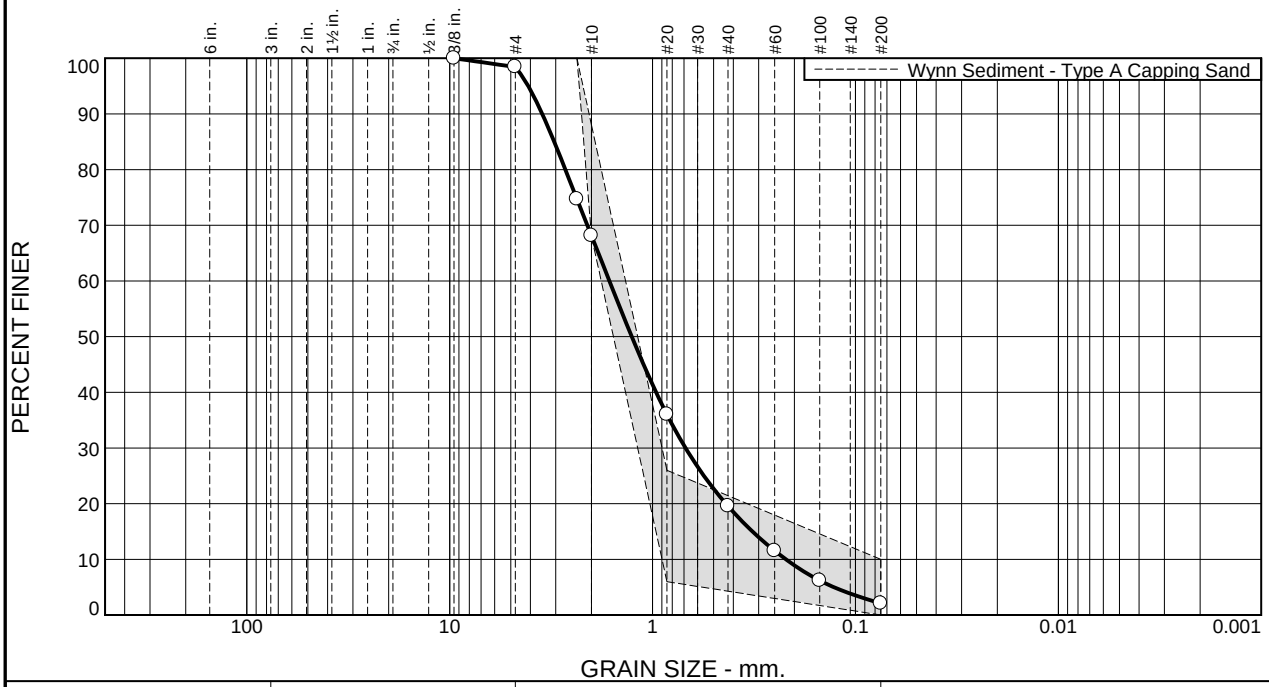
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
**Sample Number:** Type A - 010

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1711794-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.6 | 30.3 | 48.5 | 17.5 | 2.1 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.4 | | |
| #8 | 74.7 | 100.0 | X |
| #10 | 68.1 | 68.0 - 88.0 | |
| #20 | 36.0 | 6.0 - 26.0 | X |
| #40 | 19.6 | | |
| #60 | 11.5 | | |
| #100 | 6.2 | | |
| #200 | 2.1 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4965 $D_{85}$= 3.0528 $D_{60}$= 1.6325
$D_{50}$= 1.2660 $D_{30}$= 0.6878 $D_{15}$= 0.3216
$D_{10}$= 0.2202 $C_u$= 7.41 $C_c$= 1.32

**Remarks**

**Date Received:** 12/1/17 **Date Tested:** 12/5/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

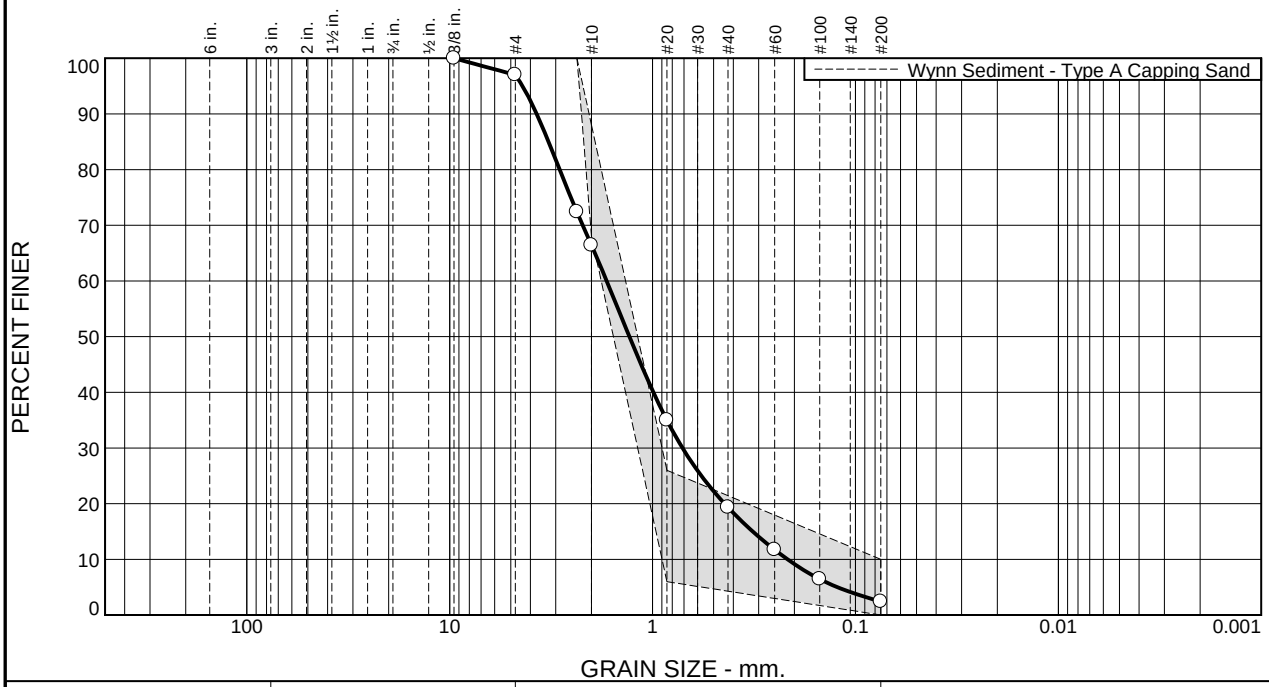
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
**Sample Number:** Type A - 011

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1711794-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 3.0 | 30.6 | 47.1 | 16.9 | 2.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 97.0 | | |
| #8 | 72.4 | 100.0 | X |
| #10 | 66.4 | 68.0 - 88.0 | X |
| #20 | 35.0 | 6.0 - 26.0 | X |
| #40 | 19.3 | | |
| #60 | 11.7 | | |
| #100 | 6.4 | | |
| #200 | 2.4 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.7257 $D_{85}$= 3.2554 $D_{60}$= 1.6842
$D_{50}$= 1.3002 $D_{30}$= 0.7120 $D_{15}$= 0.3207
$D_{10}$= 0.2162 $C_u$= 7.79 $C_c$= 1.39

**Remarks**

**Date Received:** 12/1/17 **Date Tested:** 12/5/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

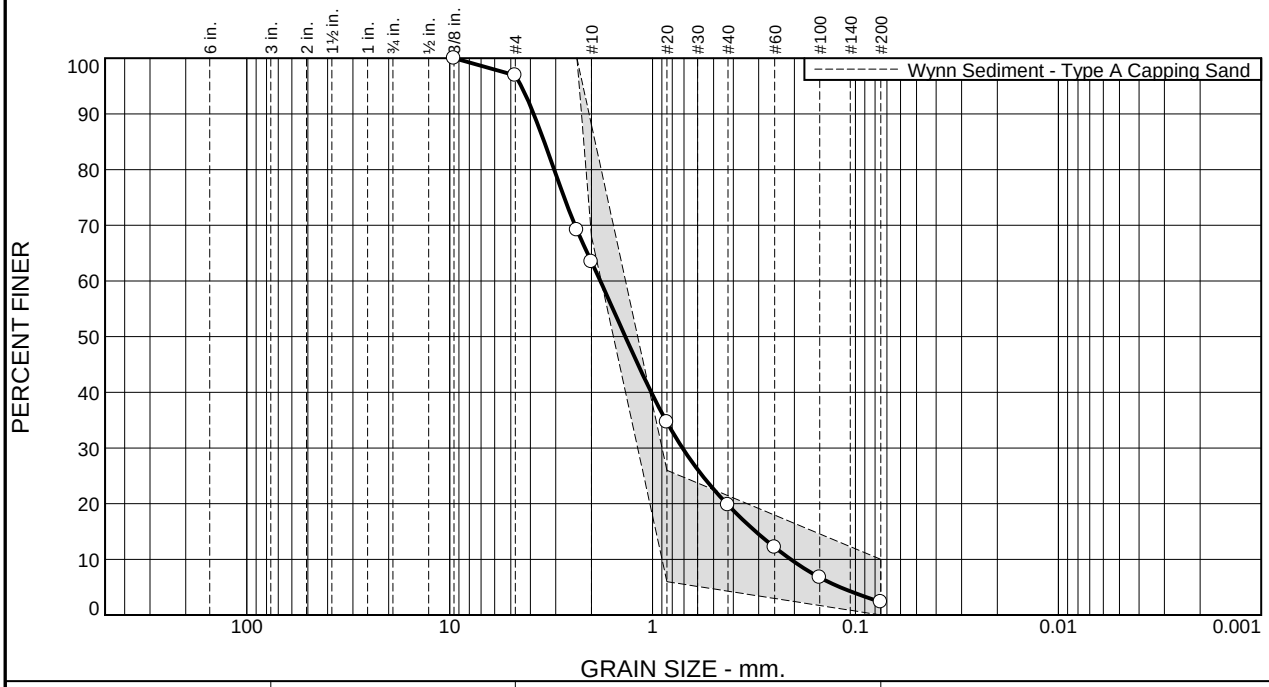
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
**Sample Number:** Type A - 012

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1711794-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 3.1 | 33.5 | 43.6 | 17.5 | 2.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 96.9 | | |
| #8 | 69.2 | 100.0 | X |
| #10 | 63.4 | 68.0 - 88.0 | X |
| #20 | 34.6 | 6.0 - 26.0 | X |
| #40 | 19.8 | | |
| #60 | 12.1 | | |
| #100 | 6.7 | | |
| #200 | 2.3 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.8532 $D_{85}$= 3.4183 $D_{60}$= 1.8091
$D_{50}$= 1.3626 $D_{30}$= 0.7121 $D_{15}$= 0.3103
$D_{10}$= 0.2085 $C_u$= 8.68 $C_c$= 1.34

**Remarks**

**Date Received:** 12/1/17 **Date Tested:** 12/5/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

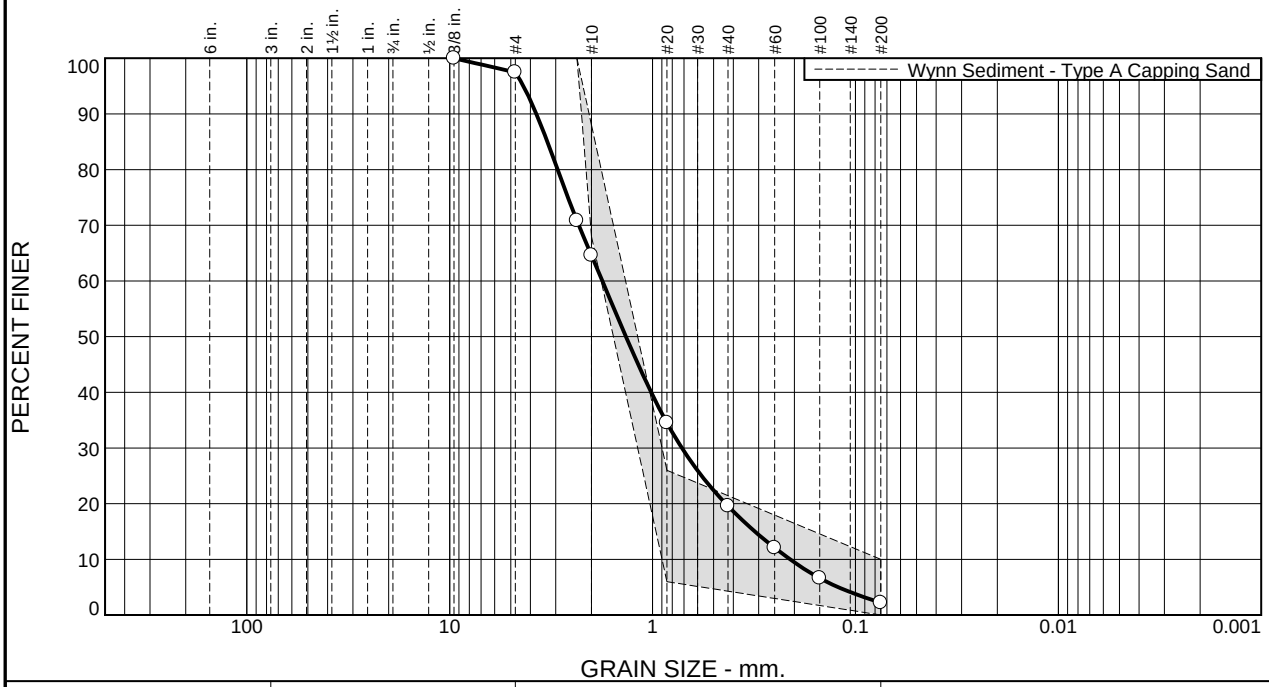
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
**Sample Number:** Type A - 013

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1711794-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.5 | 32.9 | 45.0 | 17.4 | 2.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 97.5 | | |
| #8 | 70.8 | 100.0 | X |
| #10 | 64.6 | 68.0 - 88.0 | X |
| #20 | 34.5 | 6.0 - 26.0 | X |
| #40 | 19.6 | | |
| #60 | 12.1 | | |
| #100 | 6.6 | | |
| #200 | 2.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Light Brown well-graded sand (SW)

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.7384 $D_{85}$= 3.3001 $D_{60}$= 1.7688
$D_{50}$= 1.3528 $D_{30}$= 0.7169 $D_{15}$= 0.3130
$D_{10}$= 0.2100 $C_u$= 8.42 $C_c$= 1.38

**Remarks**

**Date Received:** 12/1/17 **Date Tested:** 12/5/17

**Tested By:** JAL

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

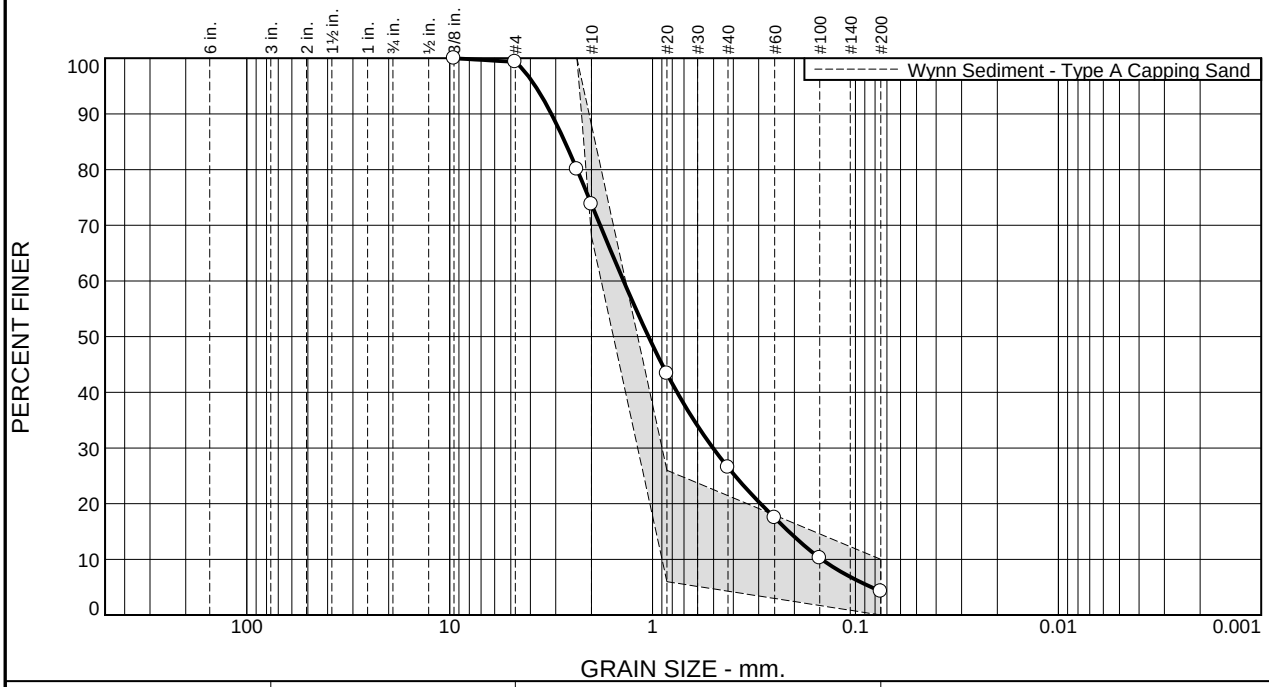
**Source of Sample:** Grab / Composite **Depth:** Stockpile **Date Sampled:** 11/30/17
**Sample Number:** Type A - 014

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1711794-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.7 | 25.5 | 47.3 | 22.3 | 4.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.3 | | |
| #8 | 80.1 | 100.0 | X |
| #10 | 73.8 | 68.0 - 88.0 | |
| #20 | 43.4 | 6.0 - 26.0 | X |
| #40 | 26.5 | | |
| #60 | 17.4 | | |
| #100 | 10.2 | | |
| #200 | 4.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.1526 $D_{85}$= 2.7064 $D_{60}$= 1.3895
$D_{50}$= 1.0470 $D_{30}$= 0.5038 $D_{15}$= 0.2131
$D_{10}$= 0.1469 $C_u$= 9.46 $C_c$= 1.24

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

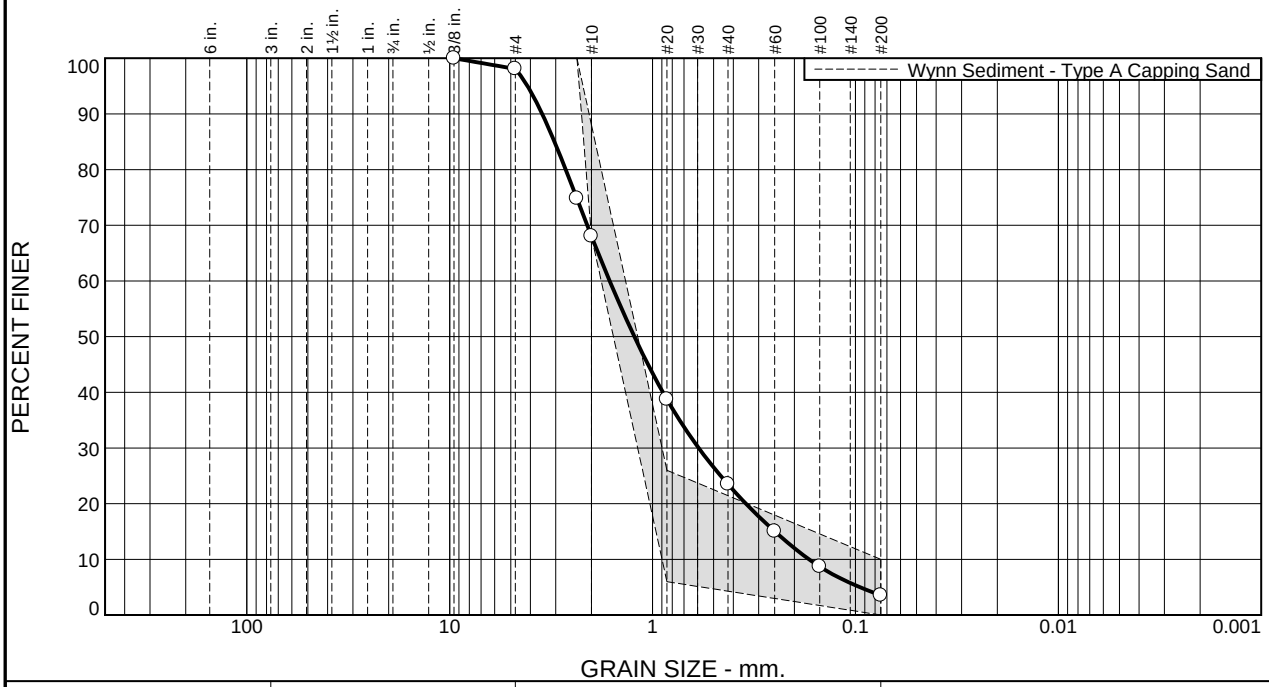
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 015

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.9 | 30.0 | 44.6 | 20.0 | 3.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.1 | | |
| #8 | 74.8 | 100.0 | X |
| #10 | 68.1 | 68.0 - 88.0 | |
| #20 | 38.7 | 6.0 - 26.0 | X |
| #40 | 23.5 | | |
| #60 | 15.0 | | |
| #100 | 8.7 | | |
| #200 | 3.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4985 $D_{85}$= 3.0436 $D_{60}$= 1.6269
$D_{50}$= 1.2292 $D_{30}$= 0.5927 $D_{15}$= 0.2495
$D_{10}$= 0.1696 $C_u$= 9.59 $C_c$= 1.27

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

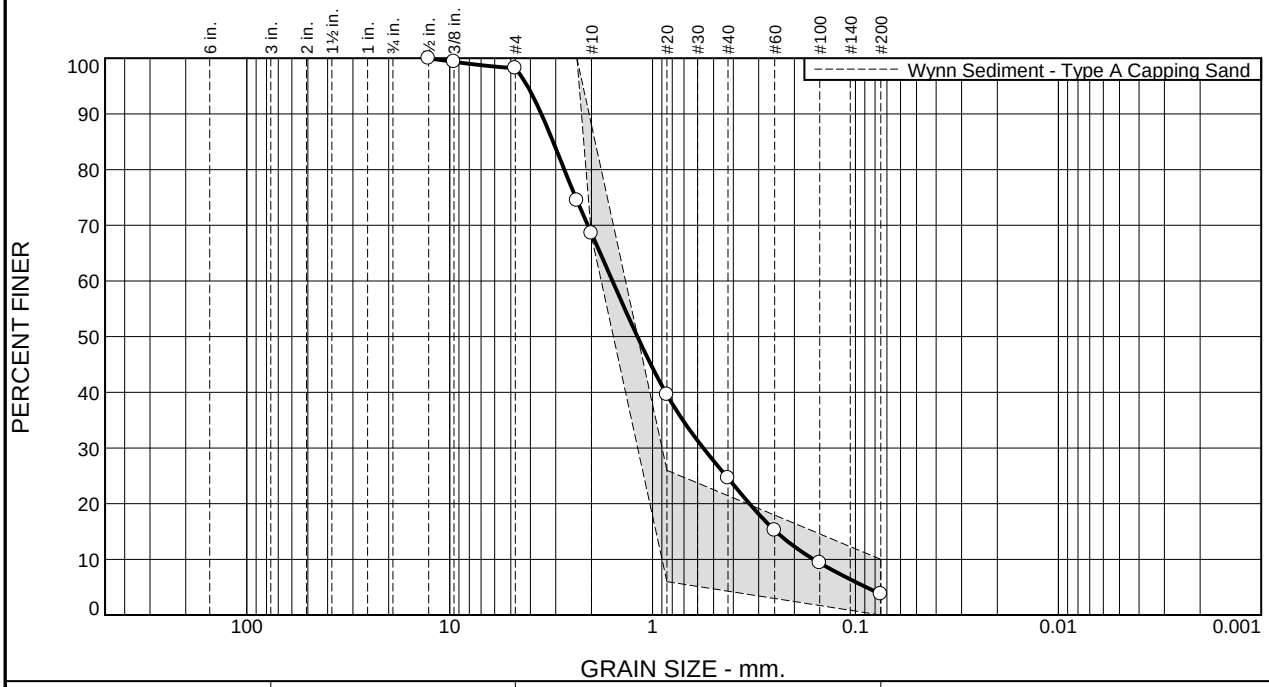
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 016

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.8 | 29.6 | 44.0 | 20.9 | 3.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.3 | | |
| #4 | 98.2 | | |
| #8 | 74.5 | 100.0 | X |
| #10 | 68.6 | 68.0 - 88.0 | |
| #20 | 39.6 | 6.0 - 26.0 | X |
| #40 | 24.6 | | |
| #60 | 15.2 | | |
| #100 | 9.4 | | |
| #200 | 3.7 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5329 $D_{85}$= 3.0911 $D_{60}$= 1.5763
$D_{50}$= 1.1876 $D_{30}$= 0.5626 $D_{15}$= 0.2465
$D_{10}$= 0.1607 $C_u$= 9.81 $C_c$= 1.25

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

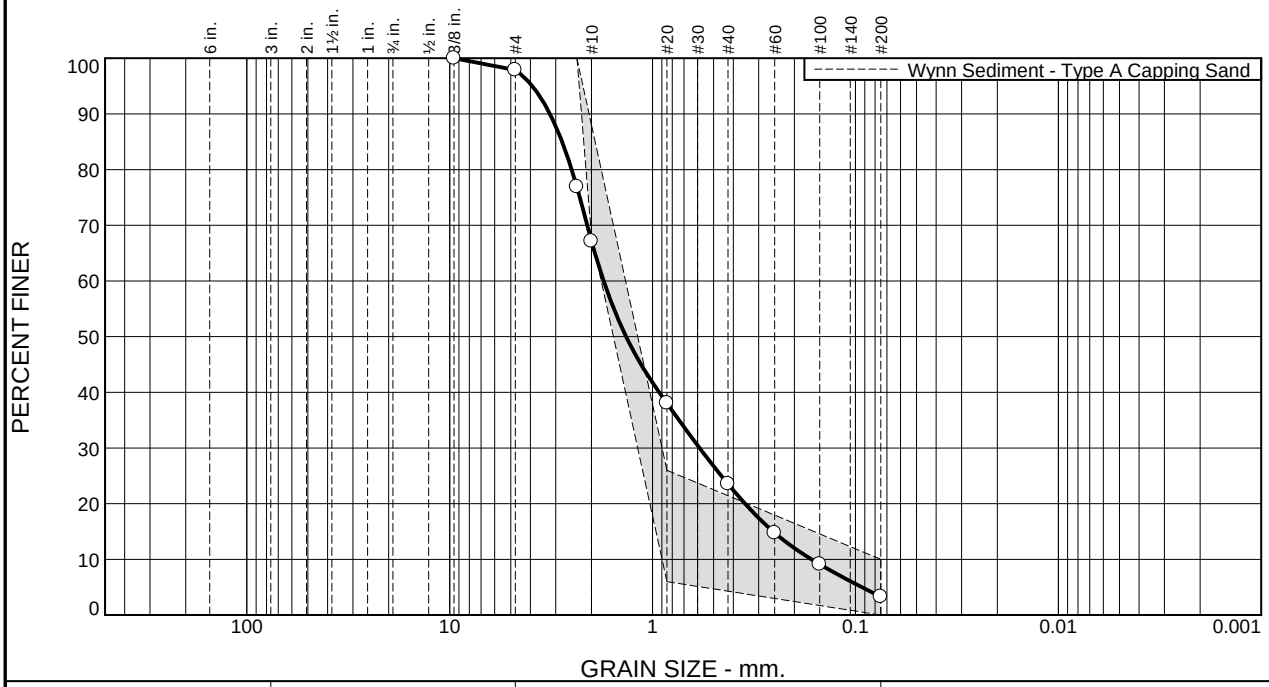
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 017

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.1 | 30.8 | 43.6 | 20.2 | 3.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 97.9 | | |
| #8 | 76.9 | 100.0 | X |
| #10 | 67.1 | 68.0 - 88.0 | X |
| #20 | 38.0 | 6.0 - 26.0 | X |
| #40 | 23.5 | | |
| #60 | 14.8 | | |
| #100 | 9.1 | | |
| #200 | 3.3 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.2036 $D_{85}$= 2.7901 $D_{60}$= 1.7423
$D_{50}$= 1.3511 $D_{30}$= 0.5865 $D_{15}$= 0.2545
$D_{10}$= 0.1648 $C_u$= 10.57 $C_c$= 1.20

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

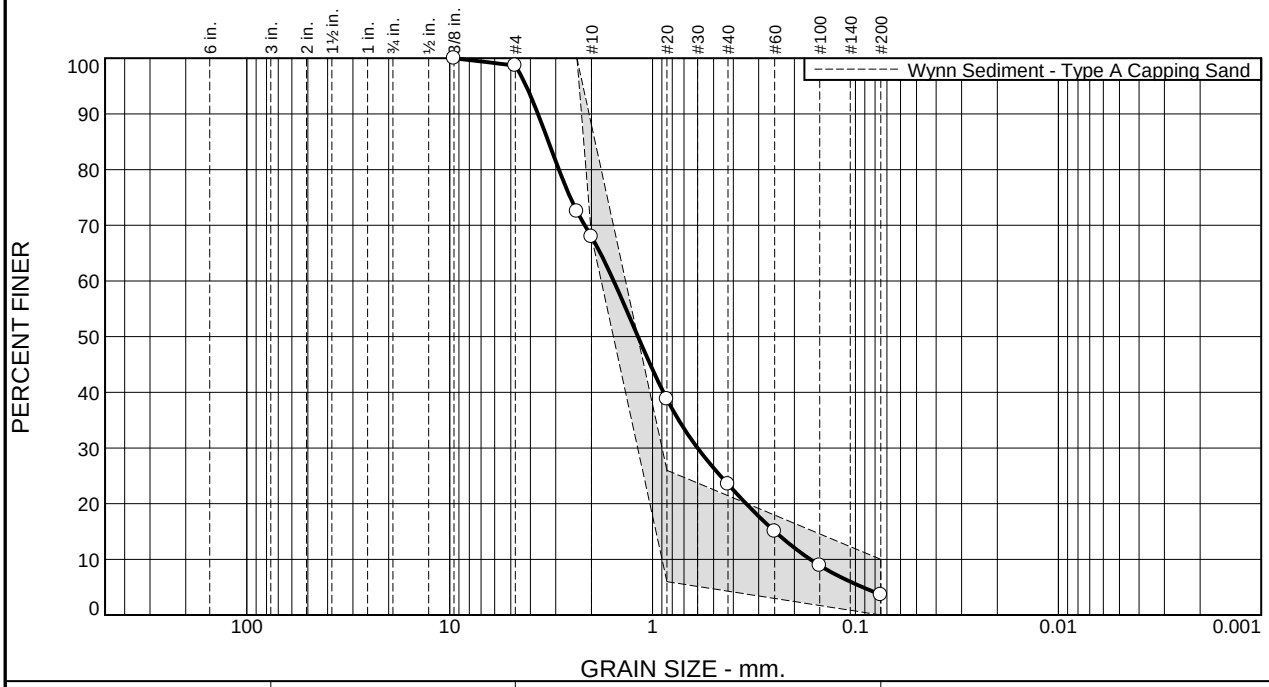
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 018

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.3 | 30.7 | 44.5 | 19.9 | 3.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.7 | | |
| #8 | 72.5 | 100.0 | X |
| #10 | 68.0 | 68.0 - 88.0 | |
| #20 | 38.8 | 6.0 - 26.0 | X |
| #40 | 23.5 | | |
| #60 | 15.0 | | |
| #100 | 8.9 | | |
| #200 | 3.6 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.6712 $D_{85}$= 3.2584 $D_{60}$= 1.5546
$D_{50}$= 1.1799 $D_{30}$= 0.6003 $D_{15}$= 0.2495
$D_{10}$= 0.1671 $C_u$= 9.30 $C_c$= 1.39

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

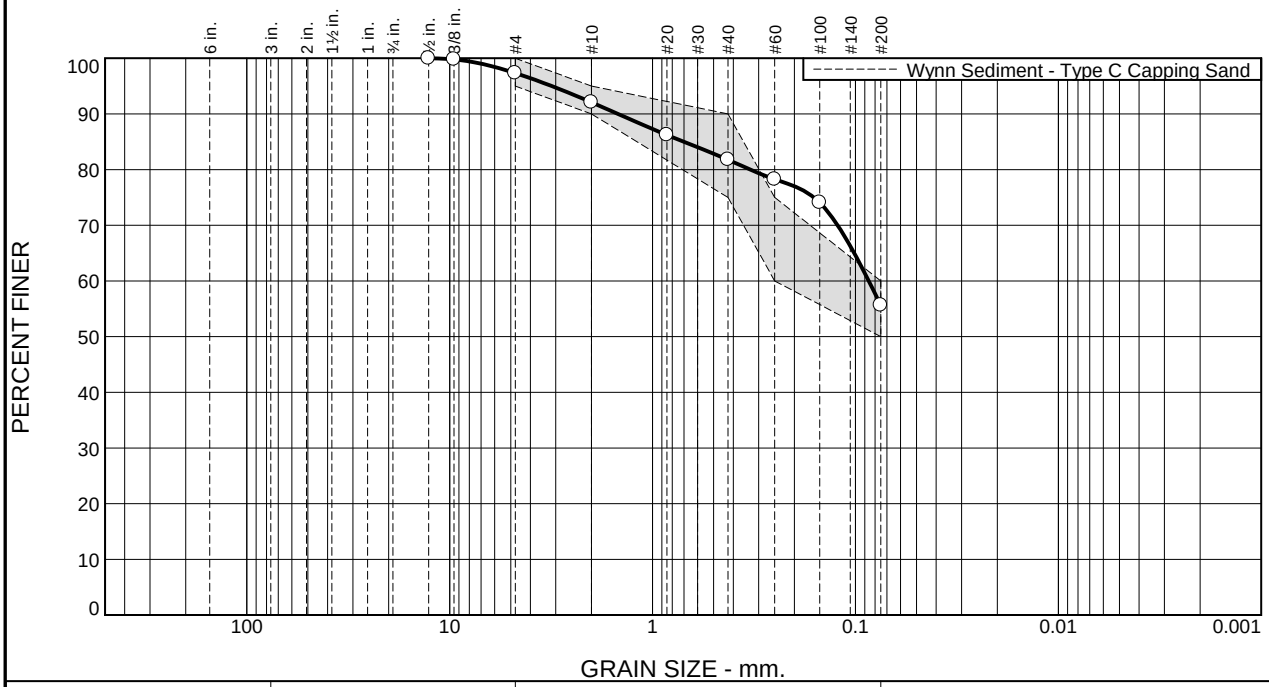
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 019

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.7 | 5.2 | 10.3 | 26.2 | 55.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.8 | | |
| #4 | 97.3 | 95.0 - 100.0 | |
| #10 | 92.1 | 90.0 - 95.0 | |
| #20 | 86.2 | | |
| #40 | 81.8 | 75.0 - 90.0 | |
| #60 | 78.3 | 60.0 - 75.0 | X |
| #100 | 74.1 | | |
| #200 | 55.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4805 $D_{85}$= 0.7022 $D_{60}$= 0.0860
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

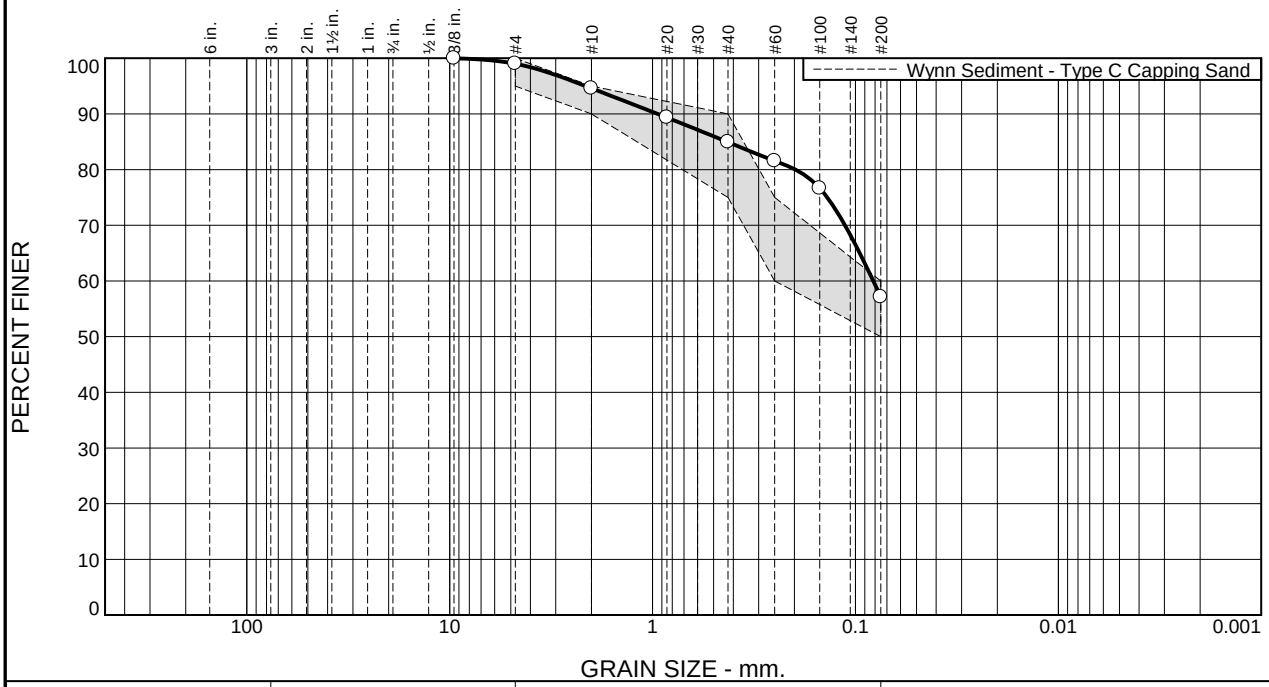
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 009

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 4.4 | 9.7 | 27.8 | 57.1 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.0 | 95.0 - 100.0 | |
| #10 | 94.6 | 90.0 - 95.0 | |
| #20 | 89.4 | | |
| #40 | 84.9 | 75.0 - 90.0 | |
| #60 | 81.6 | 60.0 - 75.0 | X |
| #100 | 76.6 | | |
| #200 | 57.1 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 0.9433 $D_{85}$= 0.4295 $D_{60}$= 0.0817
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

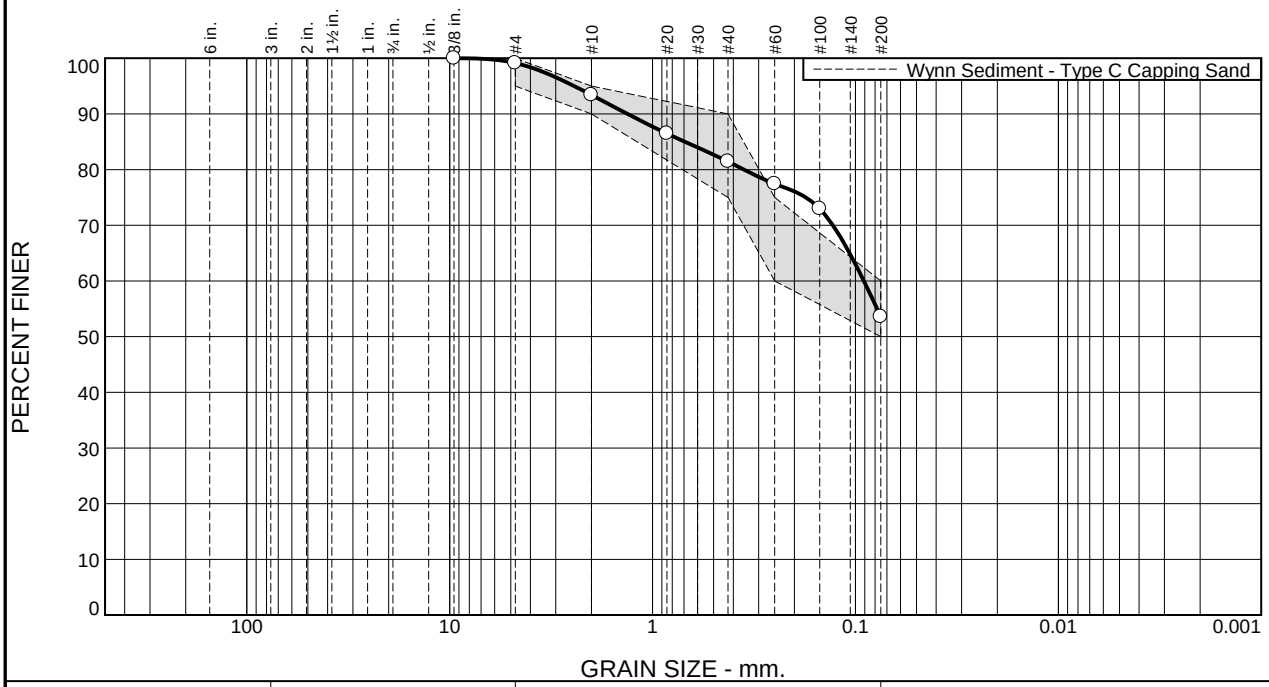
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 010

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.9 | 5.7 | 11.9 | 27.9 | 53.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.1 | 95.0 - 100.0 | |
| #10 | 93.4 | 90.0 - 95.0 | |
| #20 | 86.5 | | |
| #40 | 81.5 | 75.0 - 90.0 | |
| #60 | 77.4 | 60.0 - 75.0 | X |
| #100 | 73.0 | | |
| #200 | 53.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3287 $D_{85}$= 0.6934 $D_{60}$= 0.0910
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

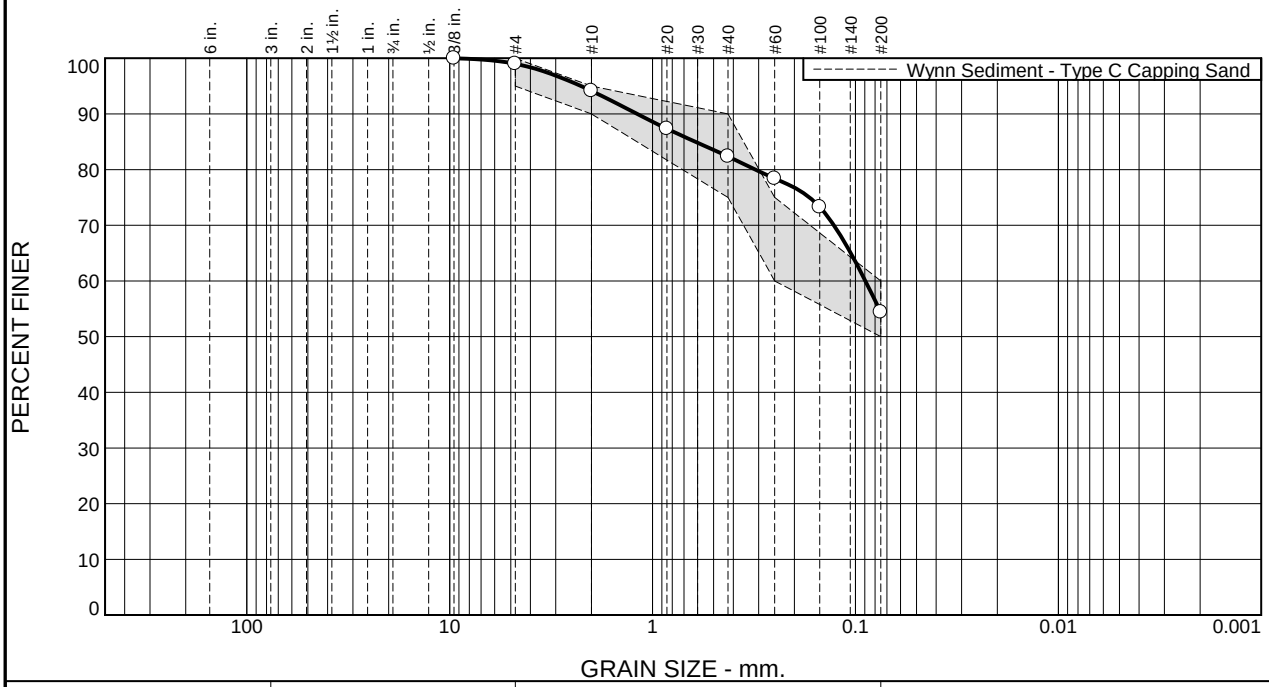
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 011

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 4.9 | 11.7 | 28.0 | 54.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.0 | 95.0 - 100.0 | |
| #10 | 94.1 | 90.0 - 95.0 | |
| #20 | 87.3 | | |
| #40 | 82.4 | 75.0 - 90.0 | |
| #60 | 78.4 | 60.0 - 75.0 | X |
| #100 | 73.3 | | |
| #200 | 54.4 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.1908 $D_{85}$= 0.6151 $D_{60}$= 0.0894
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

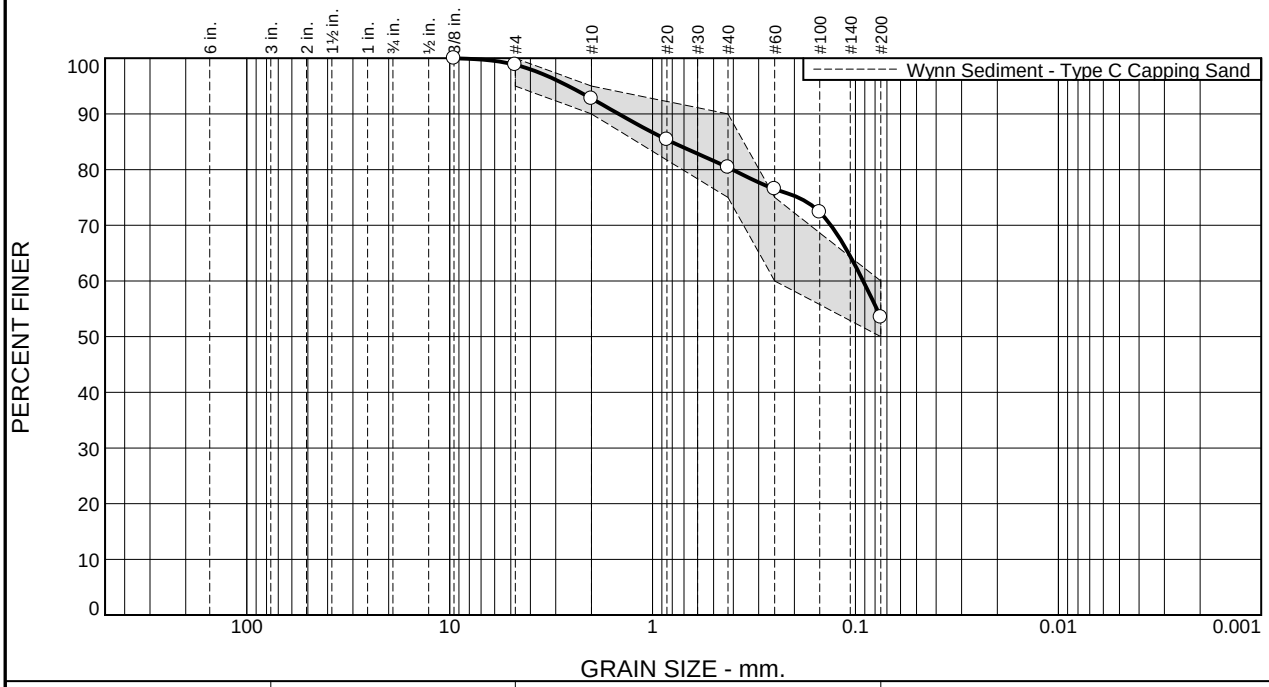
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 012

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.2 | 6.0 | 12.4 | 26.9 | 53.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.8 | 95.0 - 100.0 | |
| #10 | 92.8 | 90.0 - 95.0 | |
| #20 | 85.4 | | |
| #40 | 80.4 | 75.0 - 90.0 | |
| #60 | 76.5 | 60.0 - 75.0 | X |
| #100 | 72.4 | | |
| #200 | 53.5 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4687 $D_{85}$= 0.8101 $D_{60}$= 0.0917
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.07.17 **Date Tested:** 12.11.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

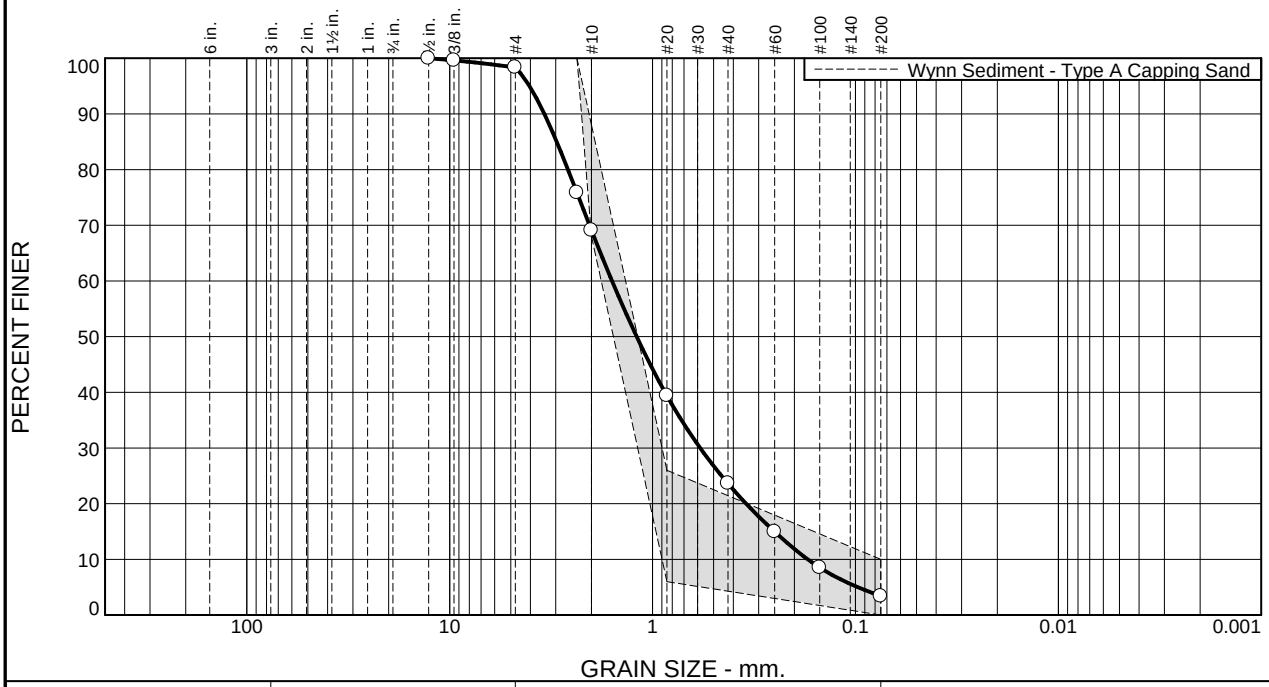
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 013

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1711794 **Figure** 1712171-10

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.7 | 29.2 | 45.5 | 20.2 | 3.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.6 | | |
| #4 | 98.3 | | |
| #8 | 75.9 | 100.0 | X |
| #10 | 69.1 | 68.0 - 88.0 | |
| #20 | 39.4 | 6.0 - 26.0 | X |
| #40 | 23.6 | | |
| #60 | 14.9 | | |
| #100 | 8.5 | | |
| #200 | 3.4 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4137 $D_{85}$= 2.9681 $D_{60}$= 1.5846
$D_{50}$= 1.1975 $D_{30}$= 0.5827 $D_{15}$= 0.2509
$D_{10}$= 0.1720 $C_u$= 9.21 $C_c$= 1.25

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

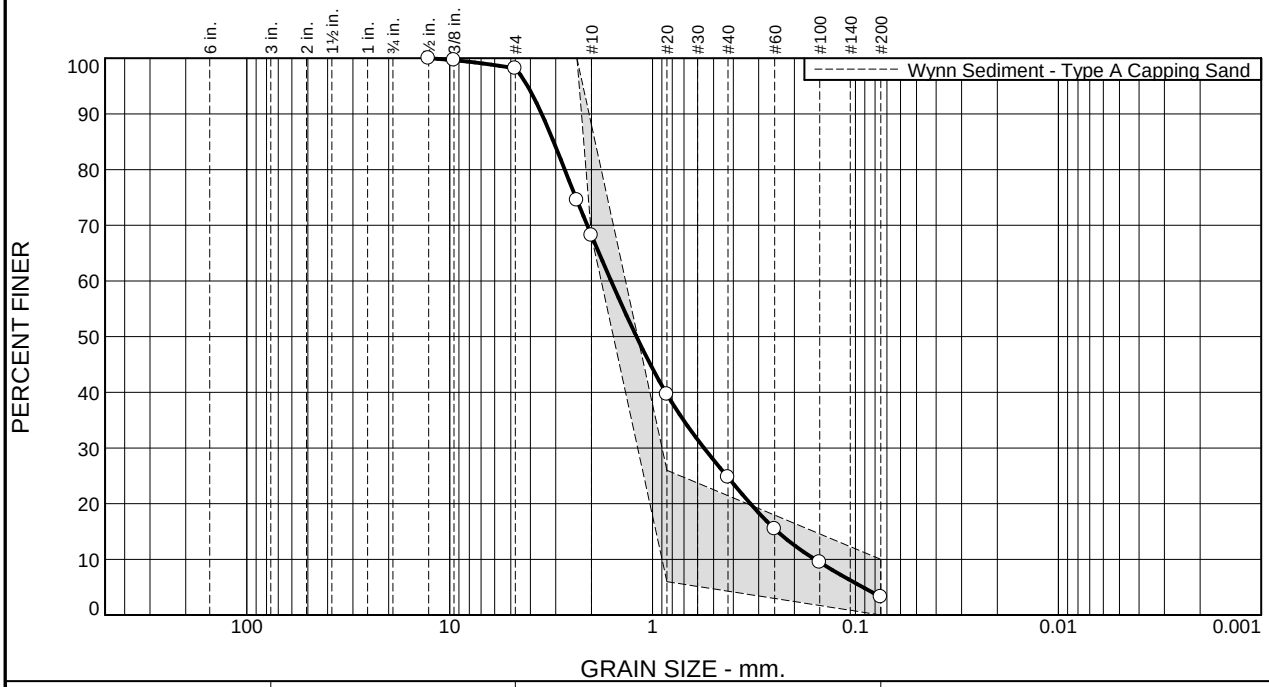
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 020

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.8 | 30.0 | 43.5 | 21.4 | 3.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.6 | | |
| #4 | 98.2 | | |
| #8 | 74.5 | 100.0 | X |
| #10 | 68.2 | 68.0 - 88.0 | |
| #20 | 39.7 | 6.0 - 26.0 | X |
| #40 | 24.7 | | |
| #60 | 15.4 | | |
| #100 | 9.5 | | |
| #200 | 3.3 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5173 $D_{85}$= 3.0738 $D_{60}$= 1.6013
$D_{50}$= 1.2002 $D_{30}$= 0.5578 $D_{15}$= 0.2424
$D_{10}$= 0.1584 $C_u$= 10.11 $C_c$= 1.23

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

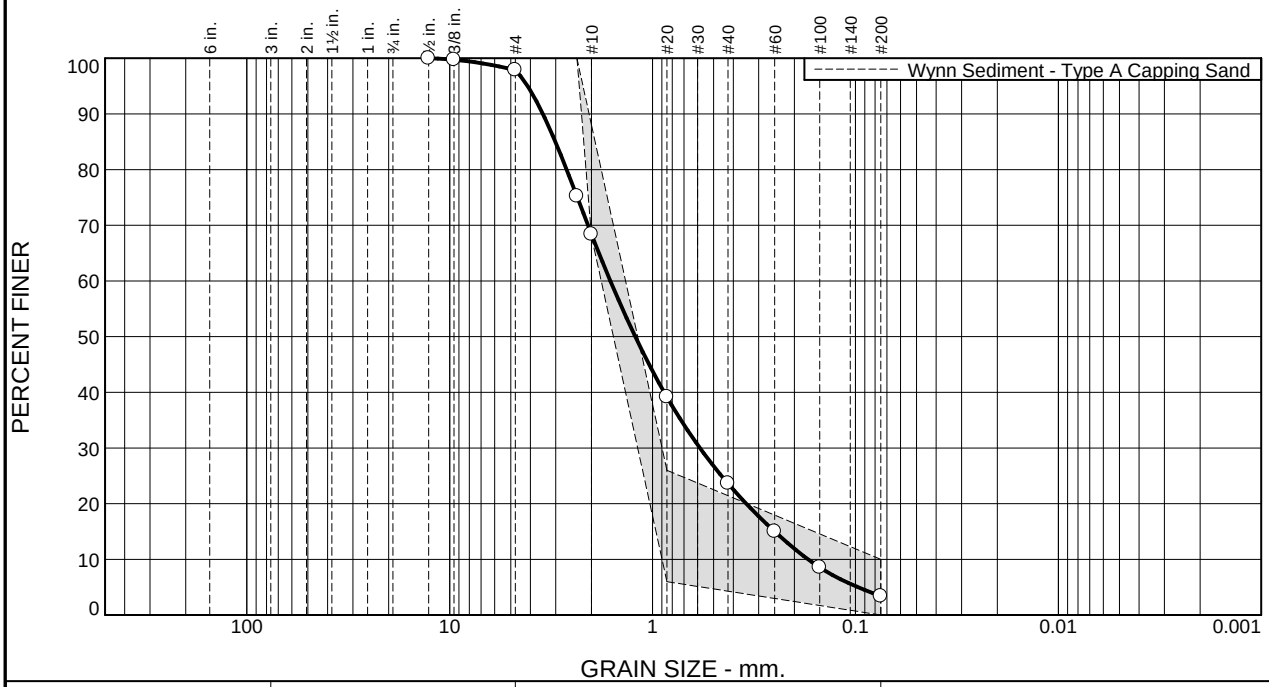
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 021

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.1 | 29.5 | 44.8 | 20.2 | 3.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 99.7 | | |
| #4 | 97.9 | | |
| #8 | 75.2 | 100.0 | X |
| #10 | 68.4 | 68.0 - 88.0 | |
| #20 | 39.2 | 6.0 - 26.0 | X |
| #40 | 23.6 | | |
| #60 | 15.0 | | |
| #100 | 8.5 | | |
| #200 | 3.4 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4728 $D_{85}$= 3.0145 $D_{60}$= 1.6144
$D_{50}$= 1.2164 $D_{30}$= 0.5843 $D_{15}$= 0.2501
$D_{10}$= 0.1714 $C_u$= 9.42 $C_c$= 1.23

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

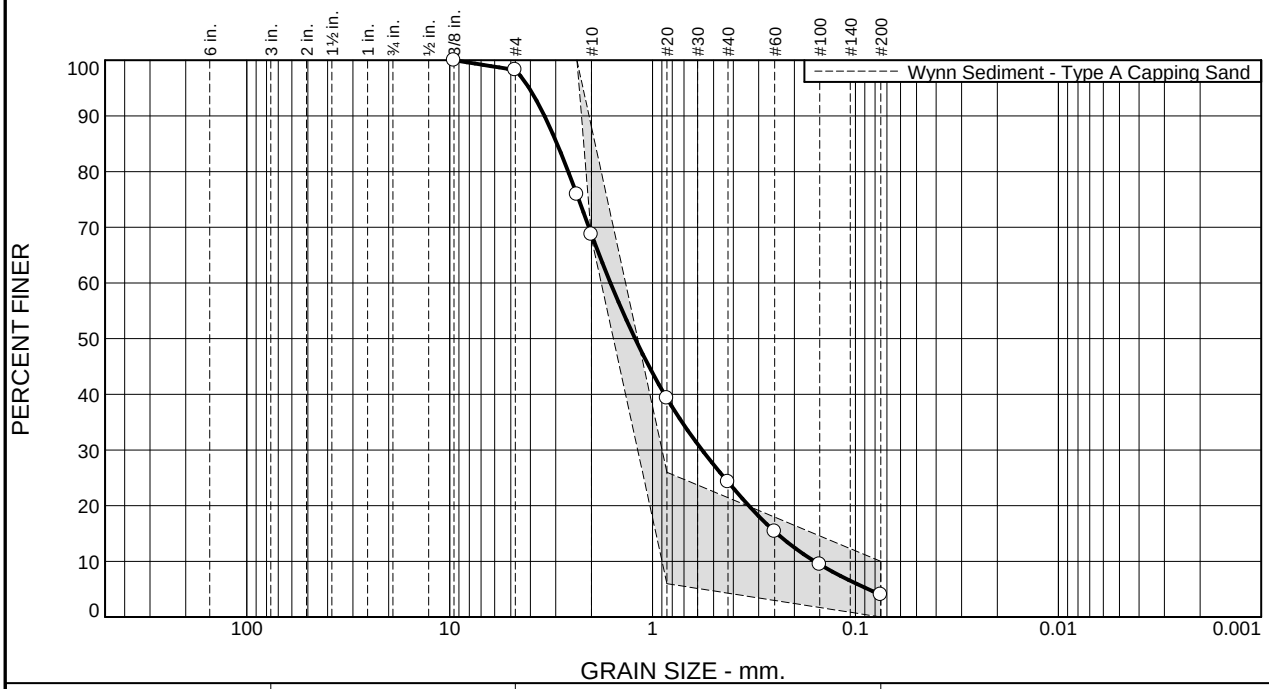
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 022

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.7 | 29.6 | 44.4 | 20.3 | 4.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.3 | | |
| #8 | 75.9 | 100.0 | X |
| #10 | 68.7 | 68.0 - 88.0 | |
| #20 | 39.3 | 6.0 - 26.0 | X |
| #40 | 24.3 | | |
| #60 | 15.3 | | |
| #100 | 9.4 | | |
| #200 | 4.0 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4097 $D_{85}$= 2.9567 $D_{60}$= 1.6126
$D_{50}$= 1.2191 $D_{30}$= 0.5703 $D_{15}$= 0.2439
$D_{10}$= 0.1590 $C_u$= 10.14 $C_c$= 1.27

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

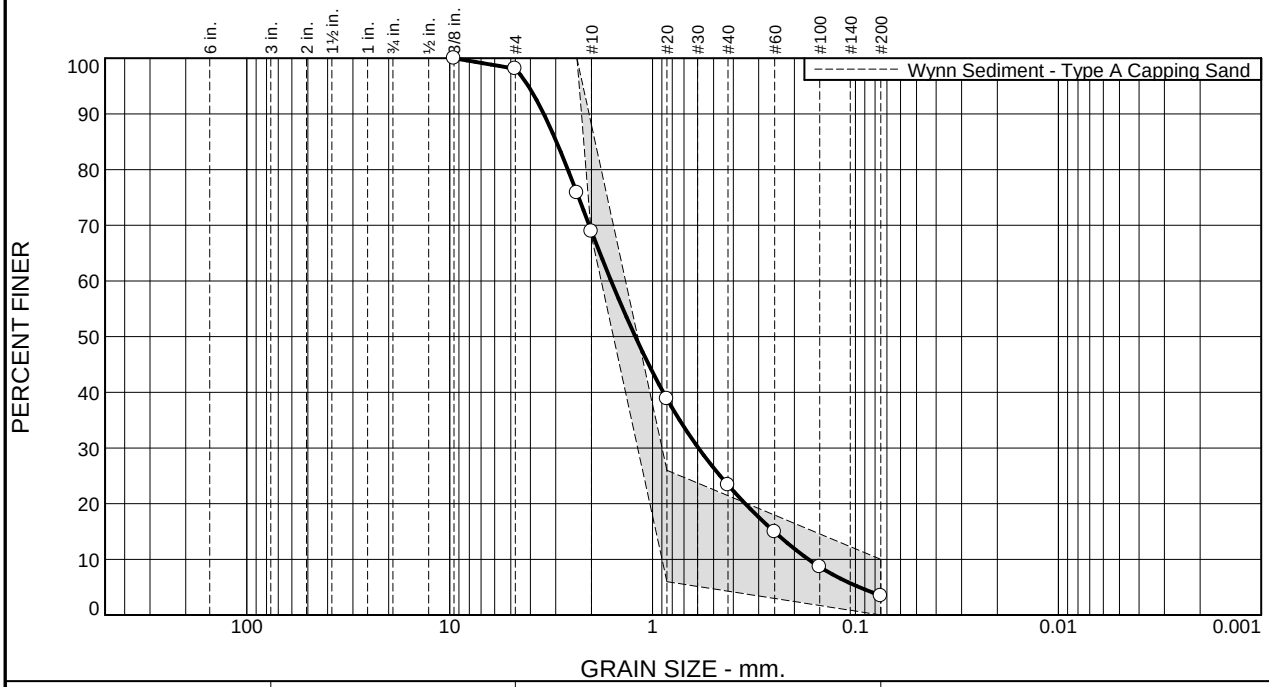
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 023

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.9 | 29.2 | 45.5 | 19.9 | 3.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.1 | | |
| #8 | 75.8 | 100.0 | X |
| #10 | 68.9 | 68.0 - 88.0 | |
| #20 | 38.8 | 6.0 - 26.0 | X |
| #40 | 23.4 | | |
| #60 | 14.9 | | |
| #100 | 8.6 | | |
| #200 | 3.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Greyish Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4370 $D_{85}$= 2.9767 $D_{60}$= 1.6002
$D_{50}$= 1.2160 $D_{30}$= 0.5943 $D_{15}$= 0.2516
$D_{10}$= 0.1706 $C_u$= 9.38 $C_c$= 1.29

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

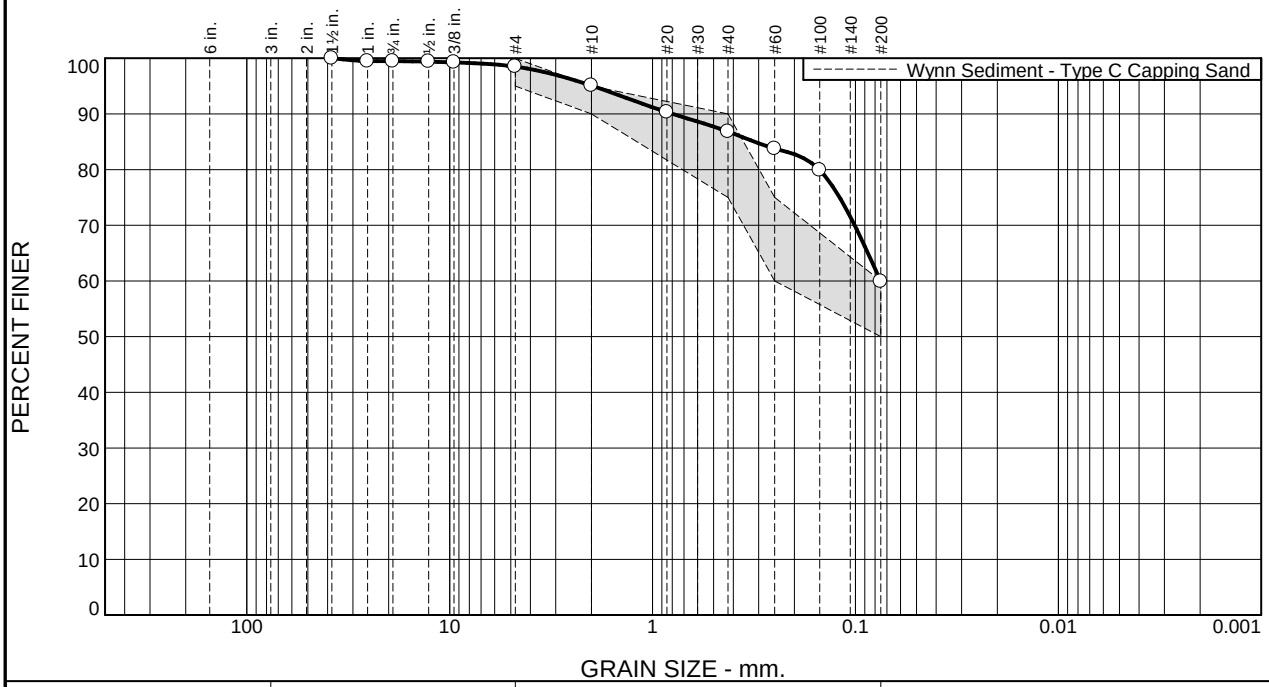
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type A - 024

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.5 | 1.0 | 3.4 | 8.3 | 26.9 | 59.9 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.5 | | |
| 0.75" | 99.5 | | |
| 0.5" | 99.4 | | |
| 0.375" | 99.2 | | |
| #4 | 98.5 | 95.0 - 100.0 | |
| #10 | 95.1 | 90.0 - 95.0 | X |
| #20 | 90.3 | | |
| #40 | 86.8 | 75.0 - 90.0 | |
| #60 | 83.8 | 60.0 - 75.0 | X |
| #100 | 79.9 | | |
| #200 | 59.9 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 0.7969 $D_{85}$= 0.3145 $D_{60}$= 0.0752
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

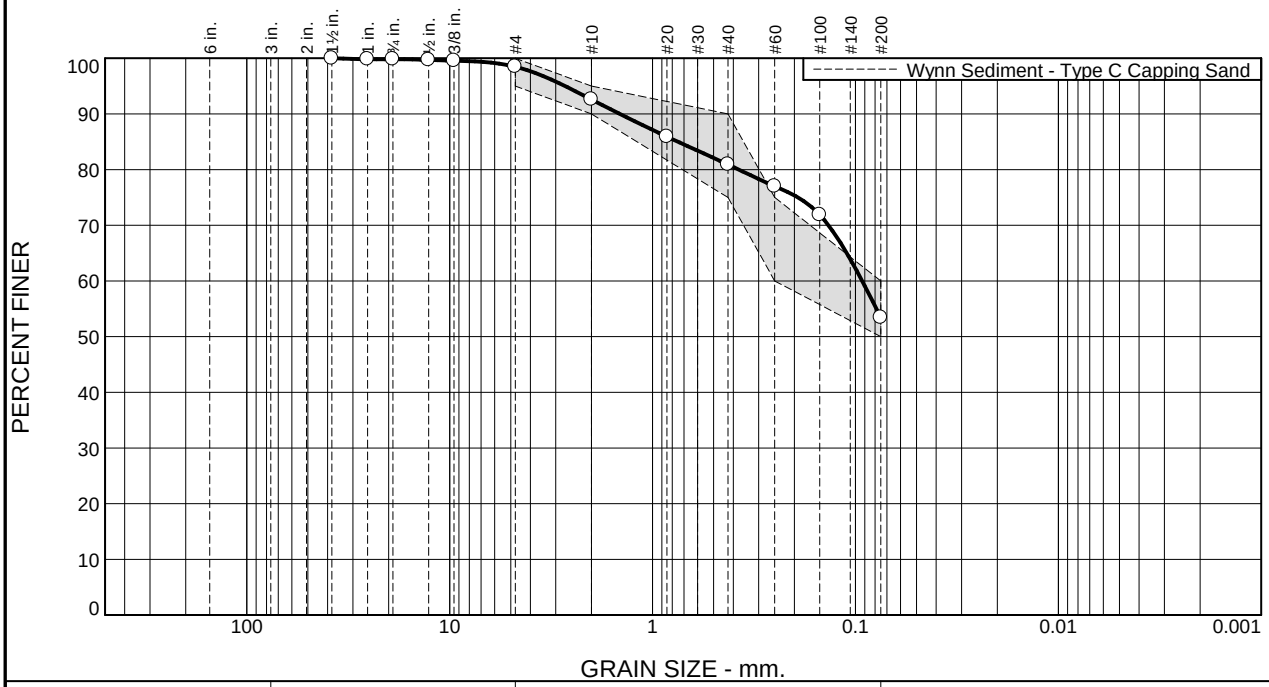
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 014

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.2 | 1.3 | 5.9 | 11.7 | 27.5 | 53.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.8 | | |
| 0.75" | 99.8 | | |
| 0.5" | 99.7 | | |
| 0.375" | 99.6 | | |
| #4 | 98.5 | 95.0 - 100.0 | |
| #10 | 92.6 | 90.0 - 95.0 | |
| #20 | 85.9 | | |
| #40 | 80.9 | 75.0 - 90.0 | |
| #60 | 77.0 | 60.0 - 75.0 | X |
| #100 | 71.9 | | |
| #200 | 53.4 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4493 $D_{85}$= 0.7498 $D_{60}$= 0.0927
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

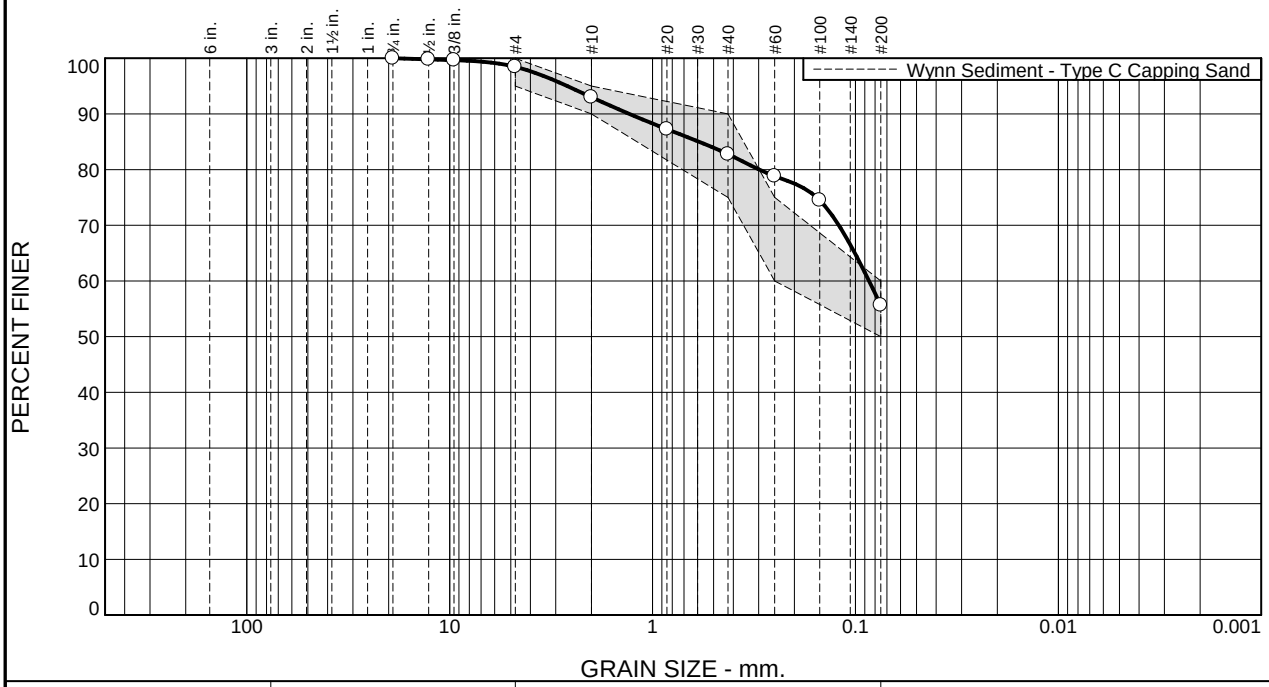
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 015

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.5 | 5.5 | 10.2 | 27.2 | 55.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.8 | | |
| 0.375" | 99.6 | | |
| #4 | 98.5 | 95.0 - 100.0 | |
| #10 | 93.0 | 90.0 - 95.0 | |
| #20 | 87.3 | | |
| #40 | 82.8 | 75.0 - 90.0 | |
| #60 | 78.8 | 60.0 - 75.0 | X |
| #100 | 74.5 | | |
| #200 | 55.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3013 $D_{85}$= 0.5896 $D_{60}$= 0.0857
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

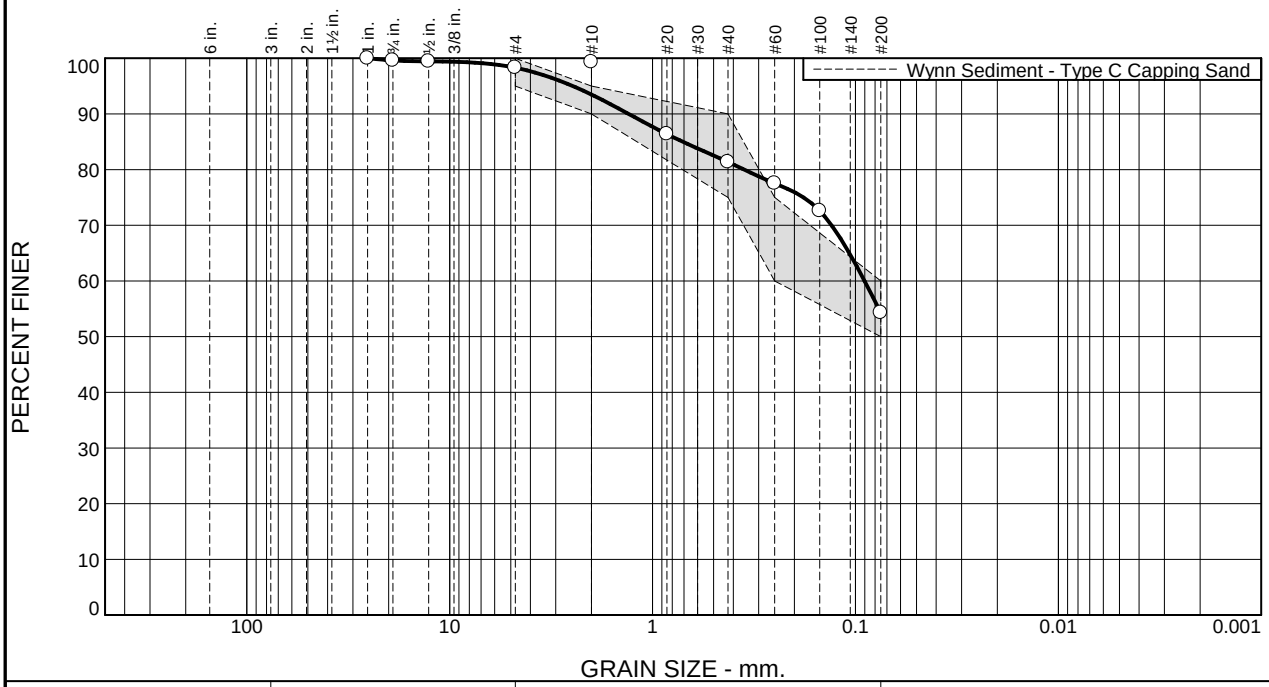
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 016

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.4 | 1.3 | 4.8 | 12.1 | 27.1 | 54.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | | |
| 0.75" | 99.6 | | |
| 0.5" | 99.4 | | |
| #4 | 98.3 | 95.0 - 100.0 | |
| #10 | 93.5 | 90.0 - 95.0 | |
| #20 | 86.4 | | |
| #40 | 81.4 | 75.0 - 90.0 | |
| #60 | 77.5 | 60.0 - 75.0 | X |
| #100 | 72.6 | | |
| #200 | 54.3 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey silty sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3125 $D_{85}$= 0.7094 $D_{60}$= 0.0902
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

Sample contained one (1) large coarse gravel aggregate.

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

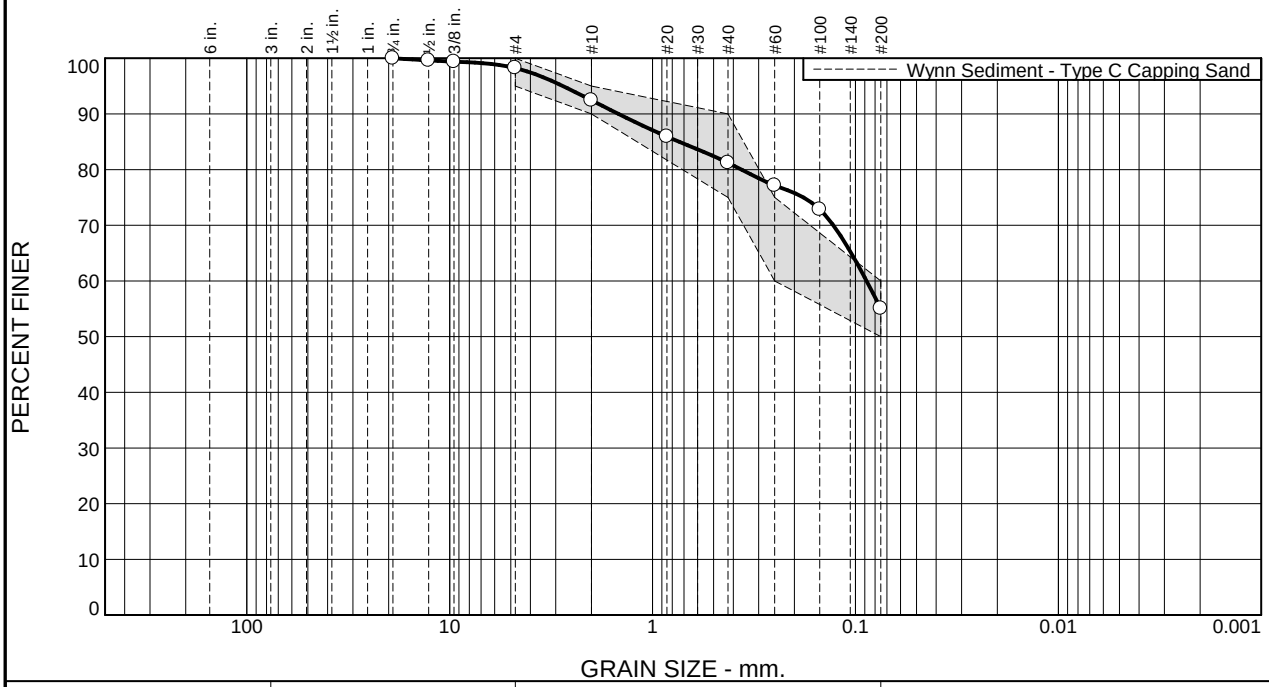
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 017

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.8 | 5.8 | 11.2 | 26.2 | 55.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.6 | | |
| 0.375" | 99.4 | | |
| #4 | 98.2 | 95.0 - 100.0 | |
| #10 | 92.4 | 90.0 - 95.0 | |
| #20 | 85.9 | | |
| #40 | 81.2 | 75.0 - 90.0 | |
| #60 | 77.2 | 60.0 - 75.0 | X |
| #100 | 72.8 | | |
| #200 | 55.0 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.4730 $D_{85}$= 0.7397 $D_{60}$= 0.0882
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.08.17 **Date Tested:** 12.12.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.07.17
**Sample Number:** Type C - 018

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712199 **Figure** 1712199-10

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1712346**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 6:10 pm, Dec 19, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
CTS - Cranston, RI — Grain Size Analysis, Soil Classification, Water Content

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

## SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712346-01 | Type C - Capping Sand -019 | Soil | § |
| 1712346-02 | Type C - Capping Sand -020 | Soil | § |
| 1712346-03 | Type C - Capping Sand -021 | Soil | § |
| 1712346-04 | Type C - Capping Sand -022 | Soil | § |
| 1712346-05 | Type C - Capping Sand -023 | Soil | § |
| 1712346-06 | Type C - Capping Sand -024 | Soil | § |
| 1712346-07 | Type C - Capping Sand -025 | Soil | § |
| 1712346-08 | Type B - Capping Sand -001 | Soil | § |
| 1712346-09 | Type B - Capping Sand -002 | Soil | § |
| 1712346-10 | Type B - Capping Sand -003 | Soil | § |
| 1712346-11 | Type B - Capping Sand -004 | Soil | § |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

## PROJECT NARRATIVE

**No unusual observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -019
Date Sampled: 12/14/17 10:10

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-01
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -020
Date Sampled: 12/14/17 10:15

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-02
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -021
Date Sampled: 12/14/17 10:20

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-03
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -022
Date Sampled: 12/14/17 10:25

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-04
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -023
Date Sampled: 12/14/17 10:30

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-05
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -024
Date Sampled: 12/14/17 10:35

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-06
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type C - Capping Sand -025
Date Sampled: 12/14/17 10:40

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-07
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -001
Date Sampled: 12/14/17 10:45

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-08
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -002
Date Sampled: 12/14/17 10:50

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-09
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -003
Date Sampled: 12/14/17 10:55

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-10
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
Client Sample ID: Type B - Capping Sand -004
Date Sampled: 12/14/17 11:00

ESS Laboratory Work Order: 1712346
ESS Laboratory Sample ID: 1712346-11
Sample Matrix: Soil

## Classical Chemistry

| Analyte | Results (MRL) | MDL | Method | Limit | DF | Analyst | Analyzed | Units | Batch |
|---|---|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** (N/A) | | | | | | | | |
| **Soil Classification** | **See Attached** (N/A) | | | | | | | | |
| **Water by Distillation** | **See Attached** (1) | | | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712346

**Notes and Definitions**

| | |
|---|---|
| Z-08 | See Attached |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712346

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

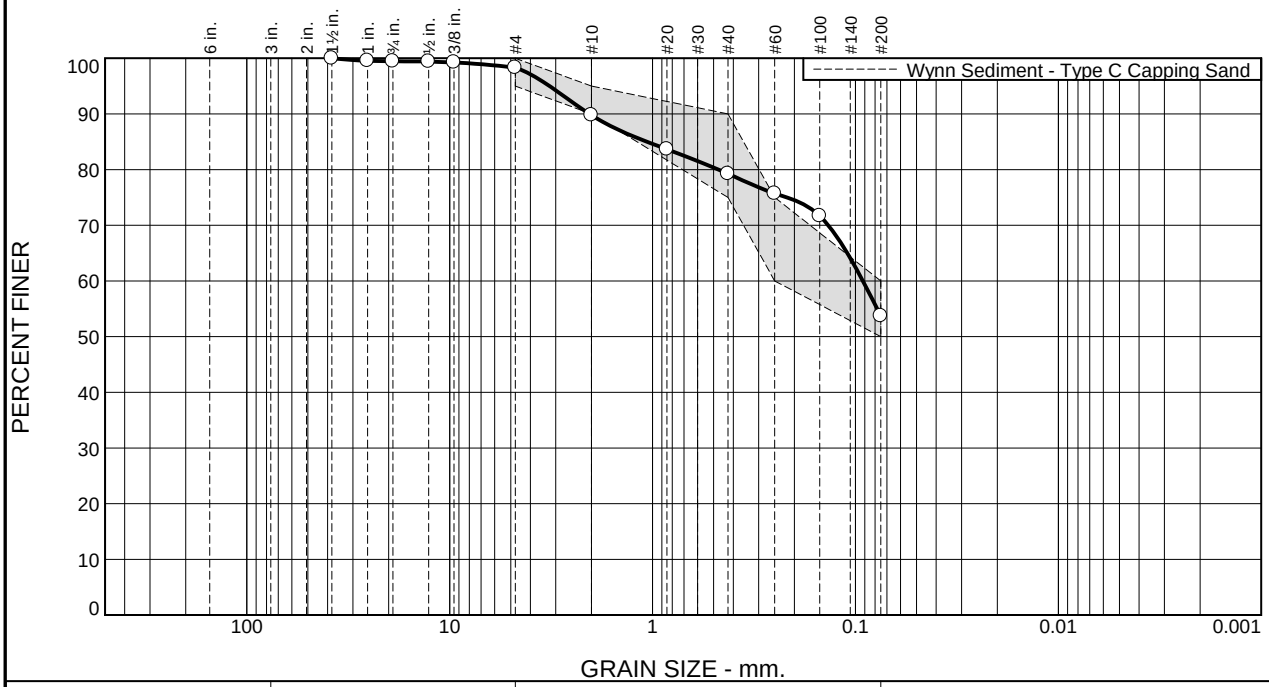
| THIELSCH ENGINEERING | 195 Frances Avenue<br>Cranston RI, 02910<br>Phone: (401)-467-6454<br>Fax: (401)-467-2398<br>http://www.thielsch.com | Client Information:<br>Charter Contracting<br>Boston, MA<br>PM: Marc Levesque<br>Assigned By:<br>Marc Levesque | Laboratory Information<br>Project Name:<br>**Wynn Boston Harbor Sediment Remediation**<br>**Boston, MA**<br>ESS Project Number: 1712348<br>Report Date: 12.19.17 |
|---|---|---|---|

# LABORATORY TESTING DATA SHEET

| Boring ID | ESS Sample No. | Depth (ft) | CTS Laboratory No. | Identification Tests | | | | | | | Density | | Strength Tests | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water Content % | LL % | PL % | Gravel % | Sand % | Fines % | Org. % | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) Corrected | CBR Setup as % of Proctor | CBR Dry unit wt. pcf | CBR Water Content % | CBR @ 0.1" @ 0.2" | Laboratory Log and Soil Description |
| Type C - Capping Sand - 019 | 1712346-01 | Stock | 17-S-2013 | 7.2 | | | 1.7 | 44.6 | 53.7 | | | | | | | | Grey sandy silt |
| Type C - Capping Sand - 020 | 1712346-02 | Stock | 17-S-2014 | 8.0 | | | 1.8 | 44.5 | 53.7 | | | | | | | | Grey sandy silt |
| Type C - Capping Sand - 021 | 1712346-03 | Stock | 17-S-2015 | 8.4 | | | 1.6 | 46.2 | 52.2 | | | | | | | | Grey sandy silt |
| Type C- Capping Sand - 022 | 1712346-04 | Stock | 17-S-2016 | 10.9 | | | 1.6 | 43.3 | 55.1 | | | | | | | | Grey sandy silt |
| Type C - Capping Sand - 023 | 1712346-05 | Stock | 17-S-2017 | 10.2 | | | 1.4 | 43.3 | 55.3 | | | | | | | | Grey sandy silt |
| Type C - Capping Sand - 024 | 1712346-06 | Stock | 17-S-2018 | 7.3 | | | 1.3 | 47.3 | 51.4 | | | | | | | | Grey sandy silt |
| Type C - Capping Sand - 025 | 1712346-07 | Stock | 17-S-2019 | 6.5 | | | 1.6 | 44.8 | 53.6 | | | | | | | | Grey sandy silt |
| Type B - Capping Sand - 001 | 1712346-08 | Stock | 17-S-2020 | 2.5 | | | 59.9 | 34.9 | 5.2 | | | | | | | | Grey poorly graded gravel with silt and sand |
| Type B - Capping Sand - 002 | 1712346-09 | Stock | 17-S-2021 | 2.5 | | | 61.4 | 33.8 | 4.8 | | | | | | | | Grey well-graded gravel with sand |
| Type B - Capping Sand - 003 | 1712346-10 | Stock | 17-S-2022 | 2.8 | | | 60.6 | 34.3 | 5.1 | | | | | | | | Grey poorly graded gravel with silt and sand |
| Type B - Capping Sand - 004 | 1712346-11 | Stock | 17-S-2023 | 2.7 | | | 60.8 | 33.5 | 5.7 | | | | | | | | Grey poorly graded gravel with silt and sand |

Reviewed By _____ Date Revised: *12.19.17*

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.5 | 1.2 | 8.5 | 10.5 | 25.6 | 53.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.5 | | |
| 0.75" | 99.5 | | |
| 0.5" | 99.4 | | |
| 0.375" | 99.2 | | |
| #4 | 98.3 | 95.0 - 100.0 | |
| #10 | 89.8 | 90.0 - 95.0 | X |
| #20 | 83.7 | | |
| #40 | 79.3 | 75.0 - 90.0 | |
| #60 | 75.7 | 60.0 - 75.0 | X |
| #100 | 71.7 | | |
| #200 | 53.7 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 2.0479 $D_{85}$= 1.0659 $D_{60}$= 0.0919
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.14.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

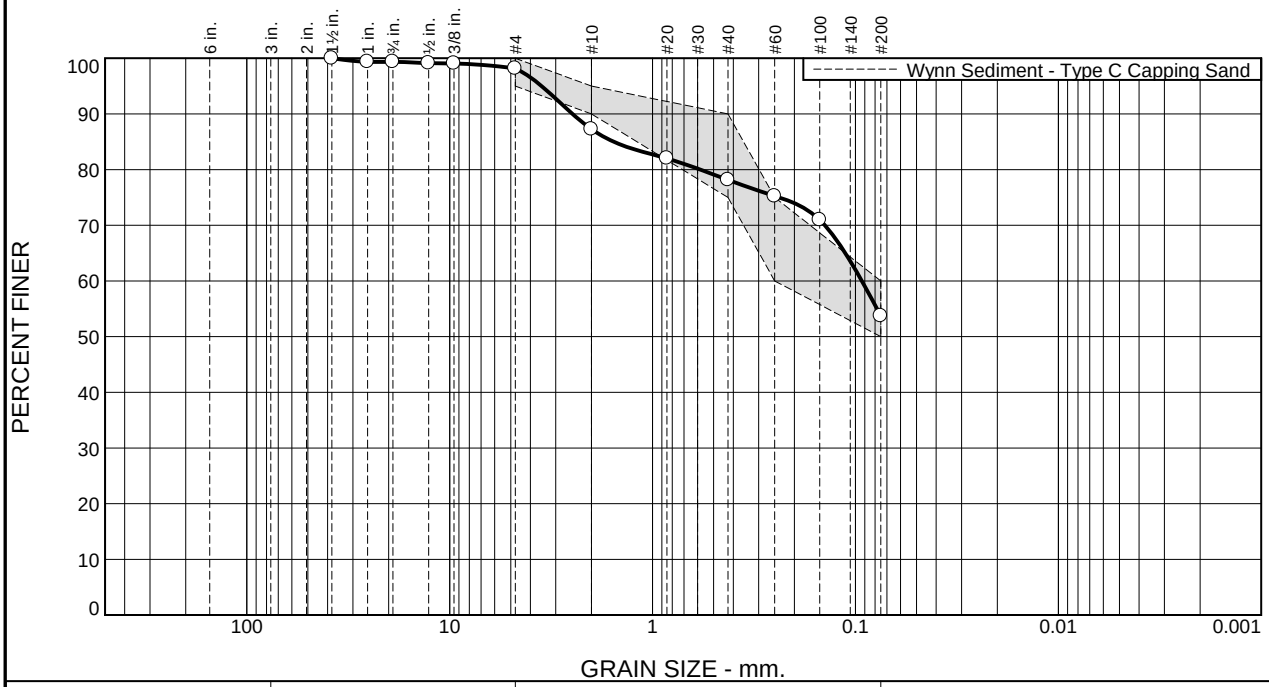
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 019

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.7 | 1.1 | 10.9 | 9.1 | 24.5 | 53.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.3 | | |
| 0.75" | 99.3 | | |
| 0.5" | 99.1 | | |
| 0.375" | 99.1 | | |
| #4 | 98.2 | 95.0 - 100.0 | |
| #10 | 87.3 | 90.0 - 95.0 | X |
| #20 | 82.0 | | |
| #40 | 78.2 | 75.0 - 90.0 | |
| #60 | 75.2 | 60.0 - 75.0 | X |
| #100 | 70.9 | | |
| #200 | 53.7 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 2.4798 $D_{85}$= 1.5538 $D_{60}$= 0.0930
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.14.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

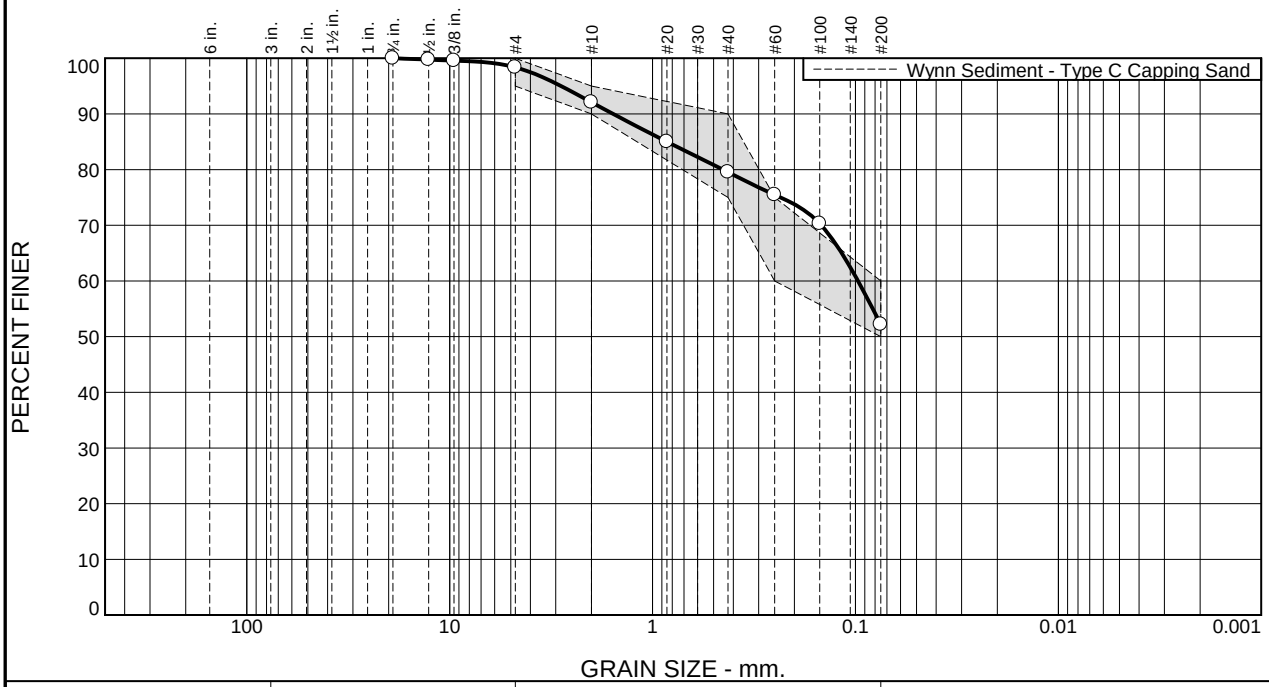
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 020

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.6 | 6.3 | 12.6 | 27.3 | 52.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.8 | | |
| 0.375" | 99.6 | | |
| #4 | 98.4 | 95.0 - 100.0 | |
| #10 | 92.1 | 90.0 - 95.0 | |
| #20 | 85.0 | | |
| #40 | 79.5 | 75.0 - 90.0 | |
| #60 | 75.5 | 60.0 - 75.0 | X |
| #100 | 70.3 | | |
| #200 | 52.2 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.5654 $D_{85}$= 0.8487 $D_{60}$= 0.0972
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

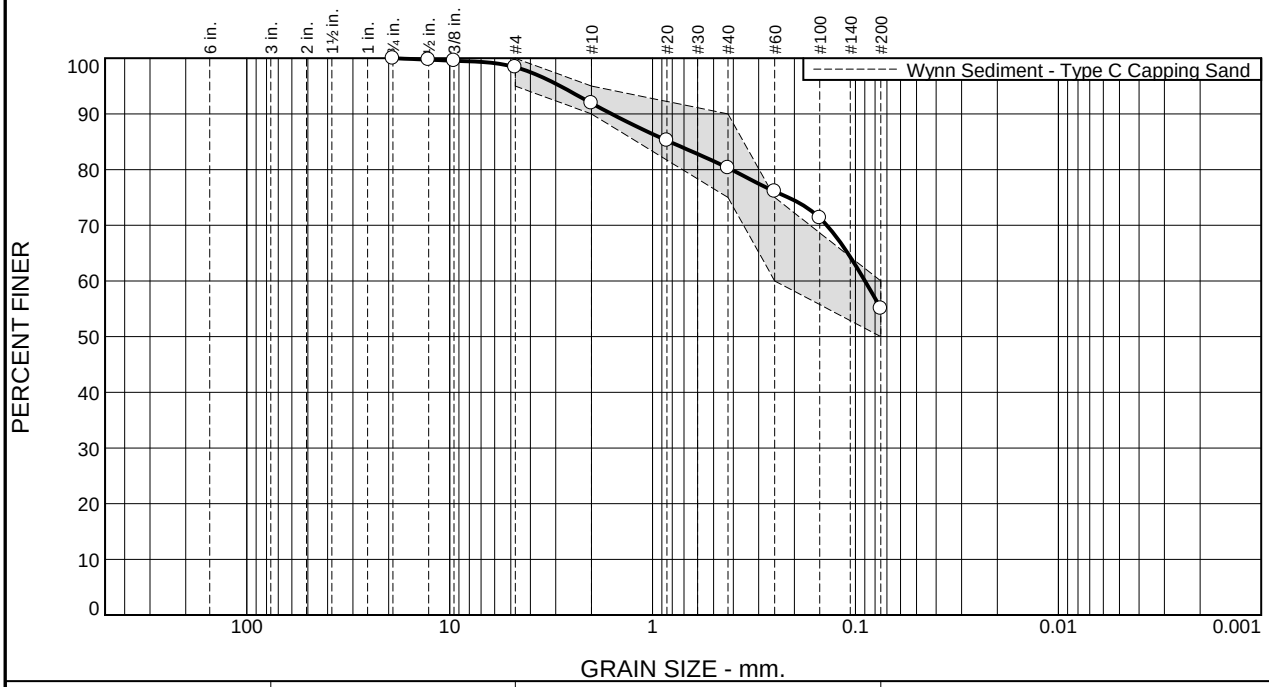
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 021

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.6 | 6.5 | 11.6 | 25.2 | 55.1 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.7 | | |
| 0.375" | 99.5 | | |
| #4 | 98.4 | 95.0 - 100.0 | |
| #10 | 91.9 | 90.0 - 95.0 | |
| #20 | 85.2 | | |
| #40 | 80.3 | 75.0 - 90.0 | |
| #60 | 76.1 | 60.0 - 75.0 | X |
| #100 | 71.3 | | |
| #200 | 55.1 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.5919 $D_{85}$= 0.8242 $D_{60}$= 0.0898
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

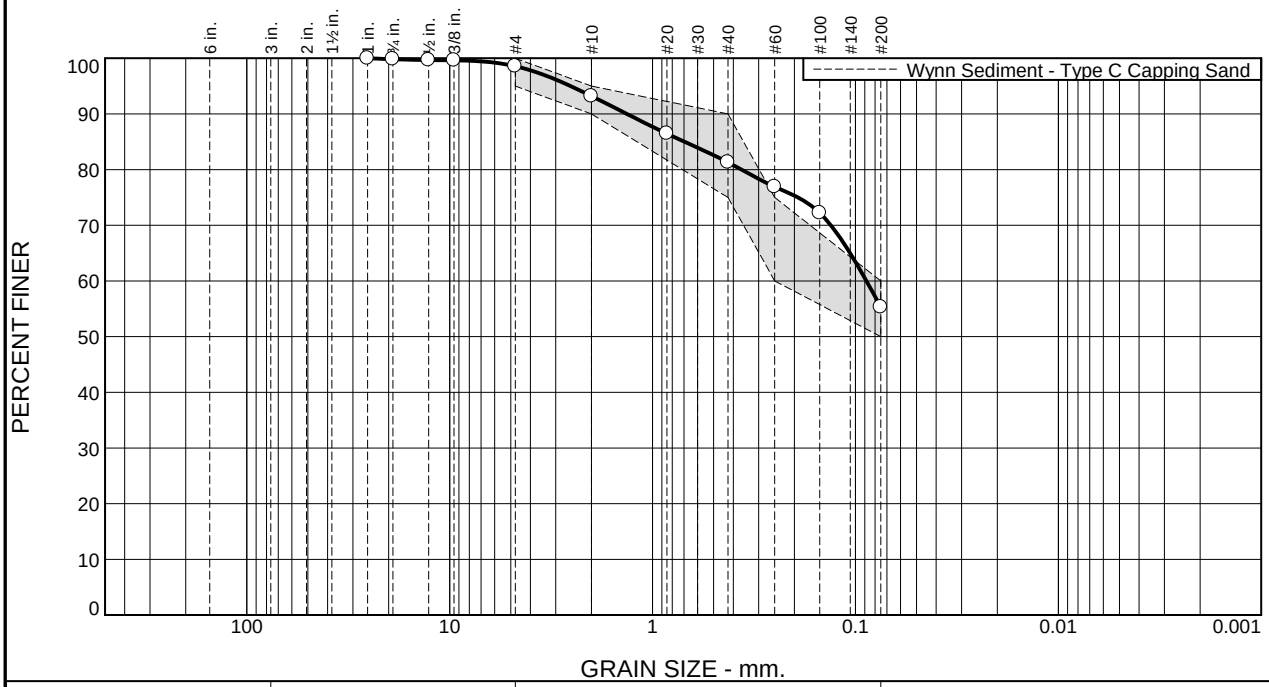
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 022

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.2 | 1.2 | 5.4 | 11.9 | 26.0 | 55.3 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | | |
| 0.75" | 99.8 | | |
| 0.5" | 99.7 | | |
| 0.375" | 99.6 | | |
| #4 | 98.6 | 95.0 - 100.0 | |
| #10 | 93.2 | 90.0 - 95.0 | |
| #20 | 86.5 | | |
| #40 | 81.3 | 75.0 - 90.0 | |
| #60 | 76.9 | 60.0 - 75.0 | X |
| #100 | 72.2 | | |
| #200 | 55.3 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 1.3386 $D_{85}$= 0.6957 $D_{60}$= 0.0883
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

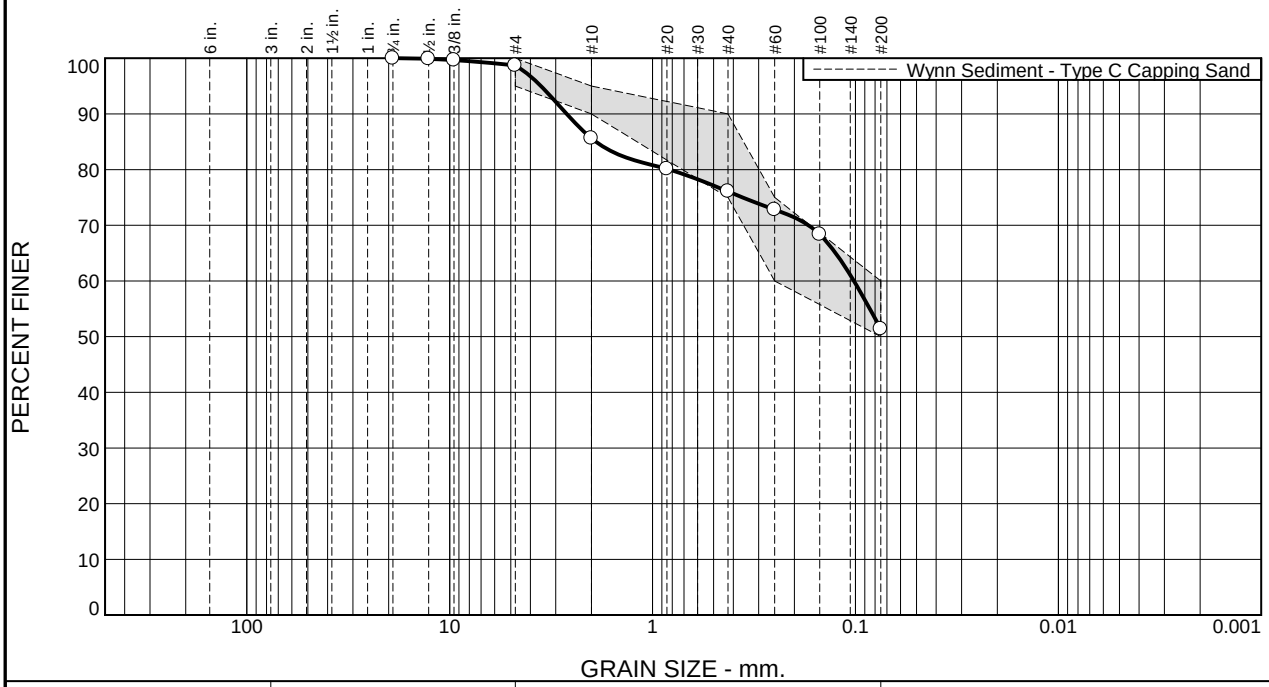
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 023

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.3 | 13.1 | 9.5 | 24.7 | 51.4 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.75" | 100.0 | | |
| 0.5" | 99.9 | | |
| 0.375" | 99.7 | | |
| #4 | 98.7 | 95.0 - 100.0 | |
| #10 | 85.6 | 90.0 - 95.0 | X |
| #20 | 80.1 | | |
| #40 | 76.1 | 75.0 - 90.0 | |
| #60 | 72.8 | 60.0 - 75.0 | |
| #100 | 68.4 | | |
| #200 | 51.4 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 2.6500 $D_{85}$= 1.9020 $D_{60}$= 0.1018
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

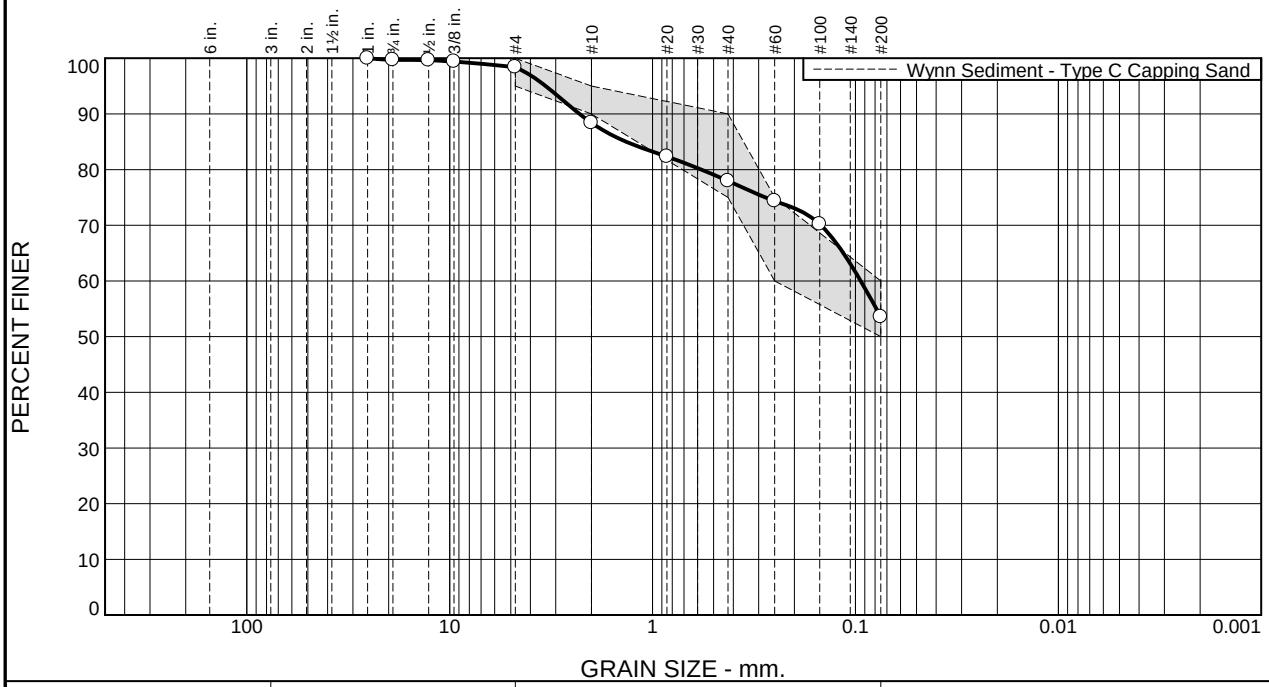
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 024

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.3 | 1.3 | 10.0 | 10.4 | 24.4 | 53.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | | |
| 0.75" | 99.7 | | |
| 0.5" | 99.7 | | |
| 0.375" | 99.4 | | |
| #4 | 98.4 | 95.0 - 100.0 | |
| #10 | 88.4 | 90.0 - 95.0 | X |
| #20 | 82.3 | | |
| #40 | 78.0 | 75.0 - 90.0 | |
| #60 | 74.4 | 60.0 - 75.0 | |
| #100 | 70.2 | | |
| #200 | 53.6 | 50.0 - 60.0 | |

* Wynn Sediment - Type C Capping Sand

**Material Description**

Grey sandy silt

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** ML **AASHTO (M 145)=** A-4(0)

**Coefficients**

$D_{90}$= 2.2924 $D_{85}$= 1.3473 $D_{60}$= 0.0942
$D_{50}$= $D_{30}$= $D_{15}$=
$D_{10}$= $C_u$= $C_c$=

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

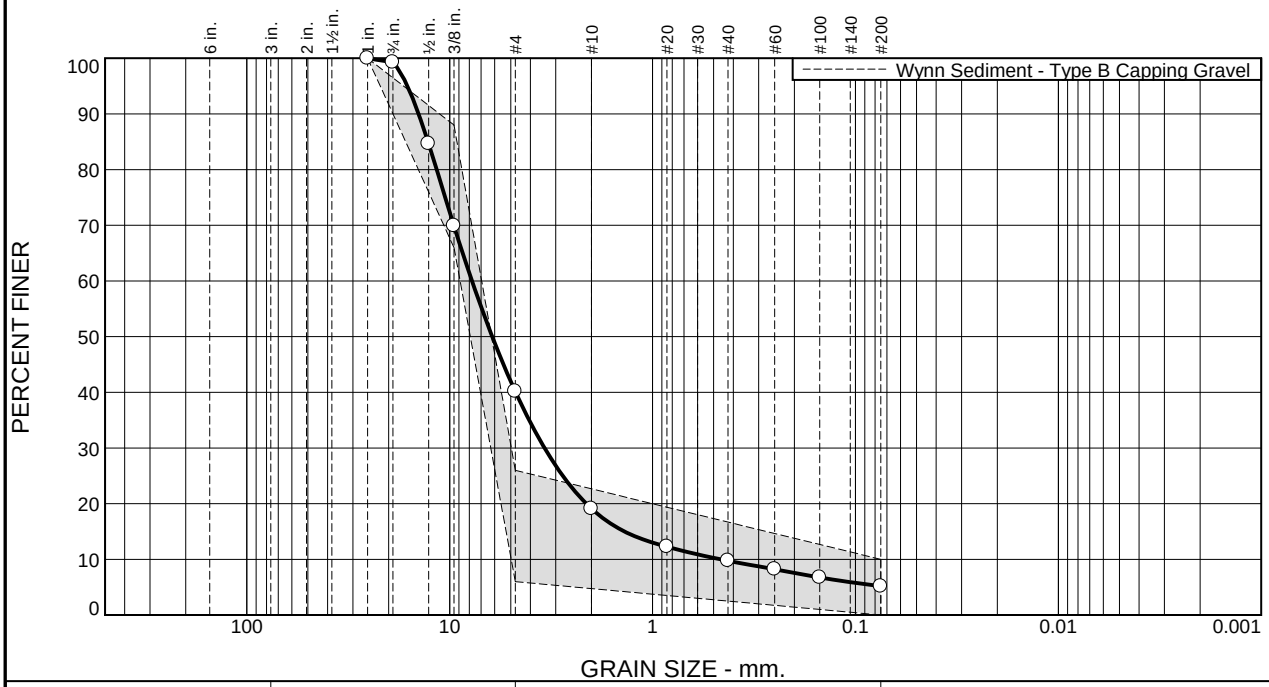
**Source of Sample:** Type C Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type C - 025

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.7 | 59.2 | 21.0 | 9.4 | 4.5 | 5.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | 100.0 | |
| 0.75" | 99.3 | | |
| 0.5" | 84.6 | | |
| 0.375" | 69.9 | 66.0 - 88.0 | |
| #4 | 40.1 | 6.0 - 26.0 | X |
| #10 | 19.1 | | |
| #20 | 12.3 | | |
| #40 | 9.7 | | |
| #60 | 8.2 | | |
| #100 | 6.7 | | |
| #200 | 5.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type B Capping Gravel

**Material Description**

Grey poorly graded gravel with silt and sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** GP-GM **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 14.2294 $D_{85}$= 12.7914 $D_{60}$= 7.7646
$D_{50}$= 6.1694 $D_{30}$= 3.4069 $D_{15}$= 1.3759
$D_{10}$= 0.4614 $C_u$= 16.83 $C_c$= 3.24

**Remarks**

**Date Received:** 12.14.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

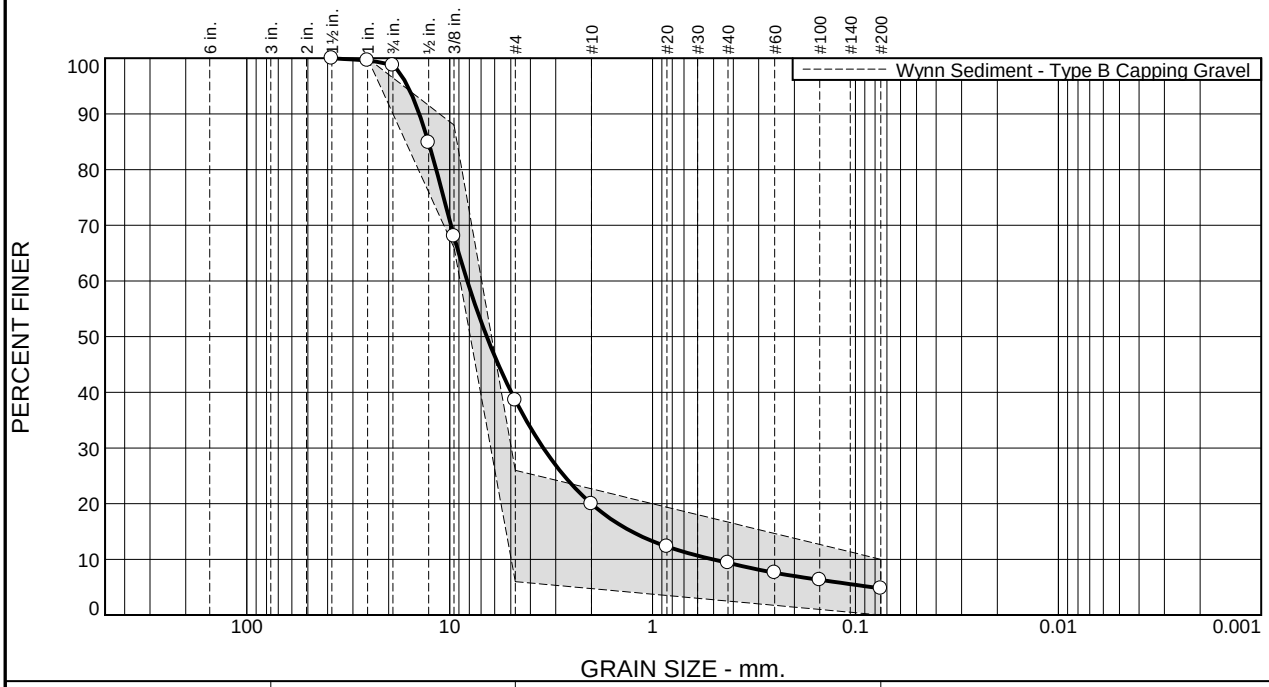
**Source of Sample:** Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type B - 001

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 1.2 | 60.2 | 18.6 | 10.6 | 4.6 | 4.8 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1.5" | 100.0 | | |
| 1" | 99.6 | 100.0 | X |
| 0.75" | 98.8 | | |
| 0.5" | 84.9 | | |
| 0.375" | 68.0 | 66.0 - 88.0 | |
| #4 | 38.6 | 6.0 - 26.0 | X |
| #10 | 20.0 | | |
| #20 | 12.3 | | |
| #40 | 9.4 | | |
| #60 | 7.6 | | |
| #100 | 6.3 | | |
| #200 | 4.8 | 0.0 - 10.0 | |

* Wynn Sediment - Type B Capping Gravel

**Material Description**

Grey well-graded gravel with sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** GW **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 14.1162 $D_{85}$= 12.7339 $D_{60}$= 8.1958
$D_{50}$= 6.5652 $D_{30}$= 3.4539 $D_{15}$= 1.2682
$D_{10}$= 0.5057 $C_u$= 16.21 $C_c$= 2.88

**Remarks**

**Date Received:** 12.14.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

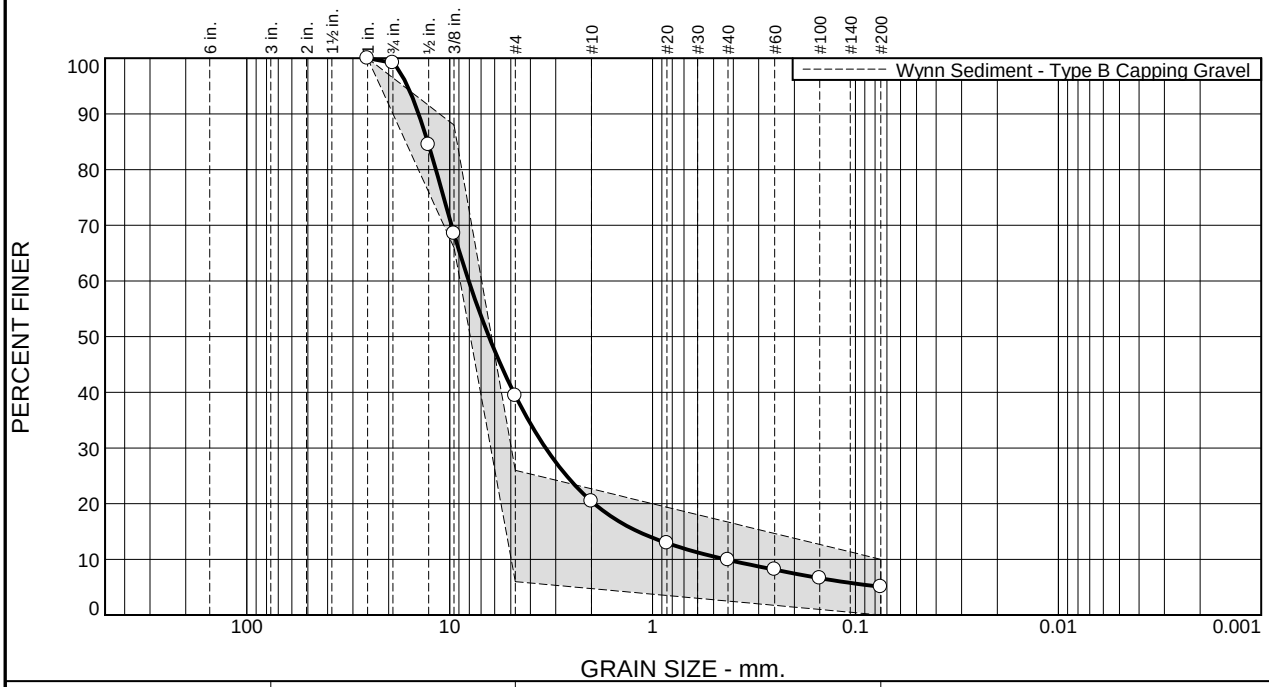
**Source of Sample:** Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type B - 002

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.8 | 59.8 | 19.0 | 10.5 | 4.8 | 5.1 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | 100.0 | |
| 0.75" | 99.2 | | |
| 0.5" | 84.5 | | |
| 0.375" | 68.5 | 66.0 - 88.0 | |
| #4 | 39.4 | 6.0 - 26.0 | X |
| #10 | 20.4 | | |
| #20 | 12.9 | | |
| #40 | 9.9 | | |
| #60 | 8.2 | | |
| #100 | 6.6 | | |
| #200 | 5.1 | 0.0 - 10.0 | |

* Wynn Sediment - Type B Capping Gravel

**Material Description**

Grey poorly graded gravel with silt and sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** GP-GM **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 14.2242 $D_{85}$= 12.8312 $D_{60}$= 8.0584
$D_{50}$= 6.4065 $D_{30}$= 3.3646 $D_{15}$= 1.1805
$D_{10}$= 0.4375 $C_u$= 18.42 $C_c$= 3.21

**Remarks**

**Date Received:** 12.14.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

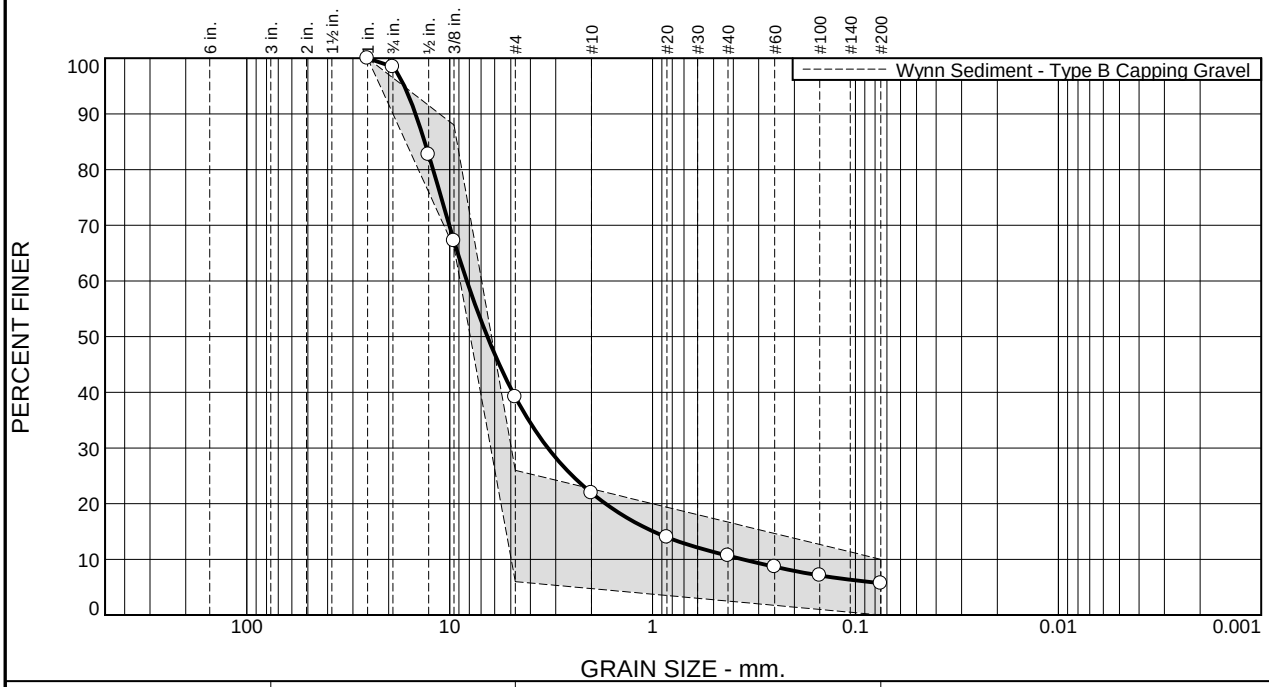
**Source of Sample:** Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type B - 003

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-10

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 1.5 | 59.3 | 17.3 | 11.2 | 5.0 | 5.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 1" | 100.0 | 100.0 | |
| 0.75" | 98.5 | | |
| 0.5" | 82.7 | | |
| 0.375" | 67.2 | 66.0 - 88.0 | |
| #4 | 39.2 | 6.0 - 26.0 | X |
| #10 | 21.9 | | |
| #20 | 14.0 | | |
| #40 | 10.7 | | |
| #60 | 8.7 | | |
| #100 | 7.1 | | |
| #200 | 5.7 | 0.0 - 10.0 | |

* Wynn Sediment - Type B Capping Gravel

**Material Description**

Grey poorly graded gravel with silt and sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** GP-GM **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 14.7350 $D_{85}$= 13.2775 $D_{60}$= 8.2323
$D_{50}$= 6.5207 $D_{30}$= 3.2807 $D_{15}$= 0.9909
$D_{10}$= 0.3593 $C_u$= 22.91 $C_c$= 3.64

**Remarks**

**Date Received:** 12.14.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Tybe B Capping Gravel **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type B - 004

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712346-11

# SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
**ESS Project No. 1712346**
Project Manager Marc Levesque
Date Received 12/14/2017 (by )

Client Company Charter
Client Email
Site Location
Date Assigned 12/14/2017

Collected By
Date Required 12/19/2017

| Sample Information | | | | Lab No. | Identification Tests | | | | | | | | Permeability | | Compaction | | | Soil Strength | | | Consol. | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring/ Test Pit No. | Sample or depth | Sample date | ESS Sample ID | | Water Cont. % | LL & PL % | Org. % | Bulk | Sieve -200 % | Hyd -2μ % | $G_s$ | Tube Den-sity | Sand | Clay | Mod. | Std. | CBR | Un-con-fined | UU | CIU | Stand ard | E.O.P. | |
| | | | | | D2216 | D4318 | D2974 | | D422 | | D854 | | D2434 | D5084 | D1557 | D698 | D1883 | D2166 | D2850 | D4767 | D2435 | D2435 | # |
| Type C - Capping Sand - 019 | | 12/14/17 | 1712346-01 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 020 | | 12/14/17 | 1712346-02 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 021 | | 12/14/17 | 1712346-03 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 022 | | 12/14/17 | 1712346-04 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 023 | | 12/14/17 | 1712346-05 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 024 | | 12/14/17 | 1712346-06 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type C - Capping Sand - 025 | | 12/14/17 | 1712346-07 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type B - Capping Sand - 001 | | 12/14/17 | 1712346-08 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type B - Capping Sand - 002 | | 12/14/17 | 1712346-09 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type B - Capping Sand - 003 | | 12/14/17 | 1712346-10 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type B - Capping Sand - 004 | | 12/15/17 | 1712346-11 | | X | | | | X | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | |

Notes: ** = D2487 Material Classification

Changes made 12/15/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

3047 SOB 12/14/17

| | |
|---|---|
| ESS Lab # | 1712346 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →) |

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 11 | 12/14/17 | 10:10 AM | Grab | Soil | Type C - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 2 | 02 12 | 12/14/17 | 10:15 AM | Grab | Soil | Type C - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 03 13 | 12/14/17 | 10:20 AM | Grab | Soil | Type C - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 4 | 04 14 | 12/14/17 | 10:25 AM | Grab | Soil | Type C - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 5 | 05 15 | 12/14/17 | 10:30 AM | Grab | Soil | Type C - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 6 | 06 16 | 12/14/17 | 10:35 AM | Grab | Soil | Type C - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | 07 17 | 12/14/17 | 10:40 AM | Grab | Soil | Type C - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 8 | 08 18 | 12/14/17 | 10:45 AM | Grab | Soil | Type B - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X |
| 9 | 09 19 | 12/14/17 | 10:50 AM | Grab | Soil | Type B - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 10 20 | 12/14/17 | 10:55 AM | Grab | Soil | Type B - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:
Seals Intact: Tim 12/3.3
Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** Please specify "Other" preservative and containers types in this space

~~Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.~~
Gradation on A 1st. Then, proceed analytical & gradation B & C

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 12/14 | 12/14/17 12pm | 12/14/17 15:34 | 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilson SPS | | | |

Changes made 12/15/17 - ML

3 DAT SUB W 12/14/17

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

| | |
|---|---|
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Is this project for any of the following? | ○CT RCP ◉MA MCP ○RGP |
| ESS Lab # | 1712346 |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 01 21 | 12/14/17 | 11:00 AM | Grab | Soil | Type B - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 12 02 22 | 12/14/17 | | Grab | Soil | TB Vials | | | | | | | | | | | |

12/14/17

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim Ice 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then, proceed analytical & gradation B & C.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/14 | [signature] 12/14/17 12pm | [signature] 12/14/17 15:34 | [signature] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton, SPS | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

3DAY SOB 12/14/17

| | |
|---|---|
| ESS Lab # | 1712346 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Reporting Limits | S-1 |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| | ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 01 11 | 12/14/17 | 10:10 AM | Grab | Soil | Type C - Capping Sand - 019 | X | X | X | X | X | X | X | X | X | X | X |
| 2 | 02 12 | 12/14/17 | 10:15 AM | Grab | Soil | Type C - Capping Sand - 020 | X | X | X | X | X | X | X | X | X | X | X |
| 3 | 03 13 | 12/14/17 | 10:20 AM | Grab | Soil | Type C - Capping Sand - 021 | X | X | X | X | X | X | X | X | X | X | X |
| 4 | 04 14 | 12/14/17 | 10:25 AM | Grab | Soil | Type C - Capping Sand - 022 | X | X | X | X | X | X | X | X | X | X | X |
| 5 | 05 15 | 12/14/17 | 10:30 AM | Grab | Soil | Type C - Capping Sand - 023 | X | X | X | X | X | X | X | X | X | X | X |
| 6 | 06 16 | 12/14/17 | 10:35 AM | Grab | Soil | Type C - Capping Sand - 024 | X | X | X | X | X | X | X | X | X | X | X |
| 7 | 07 17 | 12/14/17 | 10:40 AM | Grab | Soil | Type C - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 8 | 08 18 | 12/14/17 | 10:45 AM | Grab | Soil | Type B - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X |
| 9 | 09 19 | 12/14/17 | 10:50 AM | Grab | Soil | Type B - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 10 20 | 12/14/17 | 10:55 AM | Grab | Soil | Type B - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim Ice 3.3

Cooler Temperature: °C

**Sampled by:** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Gradation on A 1st. Then, proceed analytical & gradation B & C

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/14 | [signature] 12/14/17 12pm | [signature] 12/14/17 15:34 | [signature] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton SPS | | | |

3 DAY SUB
W 12/14/17

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

| | |
|---|---|
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Is this project for any of the following? | ○CT RCP ◉MA MCP ○RGP |
| ESS Lab # | 1712346 |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 01 21 | 12/14/17 | 11:00 AM | Grab | Soil | Type B - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X |
| 12 02 22 | 12/14/17 | | Grab | Soil | TB Vials | | | | | | | | | | | |
| W 12/14/17 | | | | | | | | | | | | | | | | |

Analysis

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim Ice 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.
Gradation on A 1st (priority). Then, proceed analytical & gradation B & C.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/14 | [signature] 12/14/17 12pm | [signature] 12/14/17 15:34 | [signature] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton, SPS | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1712348**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 3:53 pm, Dec 19, 2017**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
CTS - Cranston, RI — Grain Size Analysis, Soil Classification, Water Content

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## SAMPLE RECEIPT

The following samples were received on December 14, 2017 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1712348-01 | Type A - Capping Sand - 025 | Soil | § |
| 1712348-02 | Type A - Capping Sand - 026 | Soil | § |
| 1712348-03 | Type A - Capping Sand - 027 | Soil | § |
| 1712348-04 | Type A - Capping Sand - 028 | Soil | § |
| 1712348-05 | Type A - Capping Sand - 029 | Soil | § |
| 1712348-06 | Type A - Capping Sand - 030 | Soil | § |
| 1712348-07 | Type A - Capping Sand - 031 | Soil | § |
| 1712348-08 | Type A - Capping Sand - 032 | Soil | § |
| 1712348-09 | Type A - Capping Sand - 033 | Soil | § |
| 1712348-10 | Type A - Capping Sand - 034 | Soil | § |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## PROJECT NARRATIVE

**No unusual observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## Classical Chemistry

Client Sample ID: Type A - Capping Sand - 025
Date Sampled: 12/14/17 09:30

ESS Laboratory Sample ID: 1712348-01
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 026
Date Sampled: 12/14/17 09:34

ESS Laboratory Sample ID: 1712348-02
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 027
Date Sampled: 12/14/17 09:38

ESS Laboratory Sample ID: 1712348-03
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 028
Date Sampled: 12/14/17 09:42

ESS Laboratory Sample ID: 1712348-04
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## Classical Chemistry

Client Sample ID: Type A - Capping Sand - 029
Date Sampled: 12/14/17 09:46

ESS Laboratory Sample ID: 1712348-05
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 030
Date Sampled: 12/14/17 09:50

ESS Laboratory Sample ID: 1712348-06
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 031
Date Sampled: 12/14/17 09:54

ESS Laboratory Sample ID: 1712348-07
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 032
Date Sampled: 12/14/17 09:58

ESS Laboratory Sample ID: 1712348-08
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## Classical Chemistry

Client Sample ID: Type A - Capping Sand - 033
Date Sampled: 12/14/17 10:02

ESS Laboratory Sample ID: 1712348-09
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A - Capping Sand - 034
Date Sampled: 12/14/17 10:06

ESS Laboratory Sample ID: 1712348-10
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

## Quality Control Data

| Analyte | Result | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|---|---|---|---|---|---|---|---|---|---|

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1712348

**Notes and Definitions**

| | |
|---|---|
| Z-08 | See Attached |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1712348

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

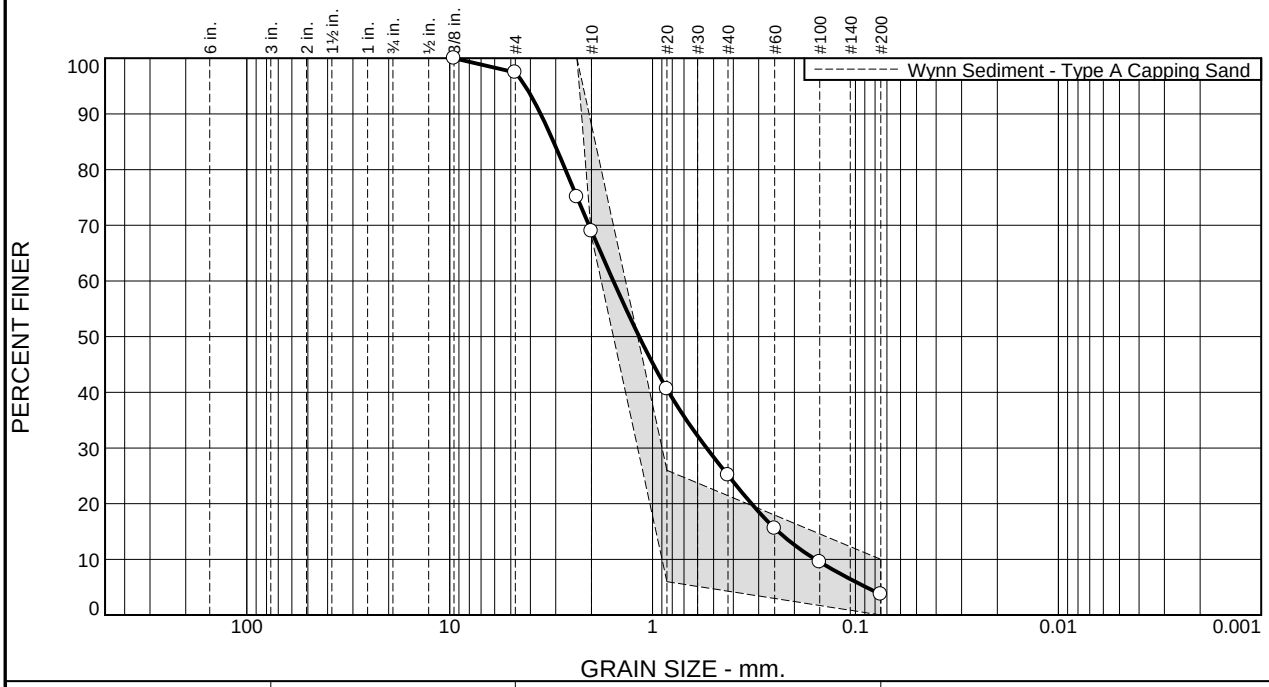
| THIELSCH ENGINEERING | 195 Frances Avenue<br>Cranston RI, 02910<br>Phone: (401)-467-6454<br>Fax: (401)-467-2398<br>http://www.thielsch.com | Client Information:<br>Charter Contracting<br>Boston, MA<br>PM: Marc Levesque<br>Assigned By:<br>Marc Levesque | Laboratory Information<br>Project Name:<br>**Wynn Boston Harbor Sediment Remediation**<br>**Boston, MA**<br>ESS Project Number: 1712348<br>Report Date: 12.19.17 |
|---|---|---|---|

# LABORATORY TESTING DATA SHEET

| Boring ID | ESS Sample No. | Depth (ft) | CTS Laboratory No. | Identification Tests | | | | | | | Density | | Strength Tests | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water Content % | LL % | PL % | Gravel % | Sand % | Fines % | Org. % | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) Corrected | CBR Setup as % of Proctor | CBR Dry unit wt. pcf | CBR Water Content % | CBR @ 0.1" @ 0.2" | Laboratory Log and Soil Description |
| Type A - Capping Sand - 025 | 1712348-01 | Stock | 17-S-1928 | 2.5 | | | 2.5 | 93.8 | 3.7 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 026 | 1712348-02 | Stock | 17-S-1929 | 2.7 | | | 1.5 | 94.9 | 3.6 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 027 | 1712348-03 | Stock | 17-S-1930 | 3.7 | | | 1.0 | 94.2 | 4.8 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 028 | 1712348-04 | Stock | 17-S-1931 | 2.9 | | | 1.3 | 94.7 | 4.0 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 029 | 1712348-05 | Stock | 17-S-1932 | 2.7 | | | 1.4 | 94.6 | 4.0 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 030 | 1712348-06 | Stock | 17-S-1933 | 3.0 | | | 1.5 | 94.4 | 4.1 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 031 | 1712348-07 | Stock | 17-S-1934 | 3.0 | | | 1.2 | 95.1 | 3.7 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 032 | 1712348-08 | Stock | 17-S-1935 | 2.8 | | | 1.5 | 94.8 | 3.7 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 033 | 1712348-09 | Stock | 17-S-1936 | 3.7 | | | 0.8 | 94.3 | 4.9 | | | | | | | | Brown well-graded sand (SW) |
| Type A - Capping Sand - 034 | 1712348-10 | Stock | 17-S-1937 | 3.5 | | | 1.6 | 93.9 | 4.5 | | | | | | | | Brown well-graded sand (SW) |
| | | | | | | | | | | | | | | | | | |

Reviewed By _____ Date Revised: *12.19.17*

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 2.5 | 28.5 | 43.9 | 21.4 | 3.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 97.5 | | |
| #8 | 75.1 | 100.0 | X |
| #10 | 69.0 | 68.0 - 88.0 | |
| #20 | 40.6 | 6.0 - 26.0 | X |
| #40 | 25.1 | | |
| #60 | 15.6 | | |
| #100 | 9.5 | | |
| #200 | 3.7 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5609 $D_{85}$= 3.0772 $D_{60}$= 1.5613
$D_{50}$= 1.1641 $D_{30}$= 0.5416 $D_{15}$= 0.2405
$D_{10}$= 0.1575 $C_u$= 9.92 $C_c$= 1.19

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

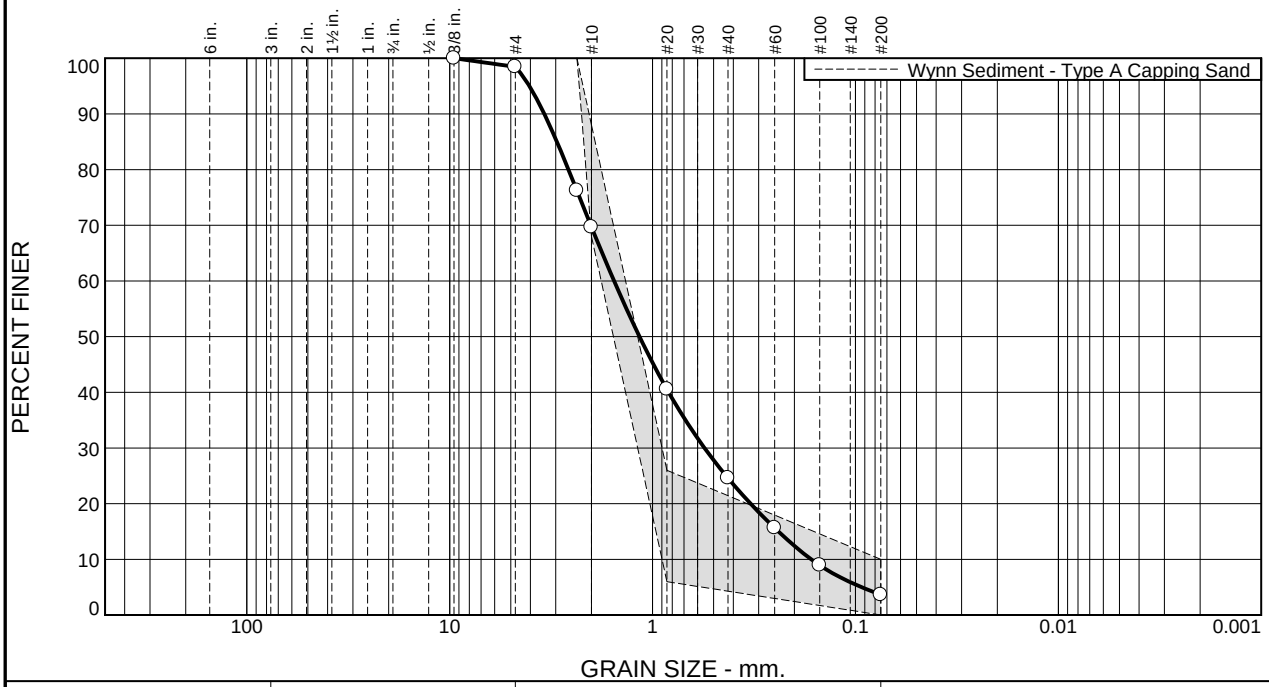
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 025

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.5 | 28.8 | 45.1 | 21.0 | 3.6 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.5 | | |
| #8 | 76.2 | 100.0 | X |
| #10 | 69.7 | 68.0 - 88.0 | |
| #20 | 40.5 | 6.0 - 26.0 | X |
| #40 | 24.6 | | |
| #60 | 15.6 | | |
| #100 | 8.9 | | |
| #200 | 3.6 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4159 $D_{85}$= 2.9619 $D_{60}$= 1.5477
$D_{50}$= 1.1598 $D_{30}$= 0.5545 $D_{15}$= 0.2396
$D_{10}$= 0.1652 $C_u$= 9.37 $C_c$= 1.20

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

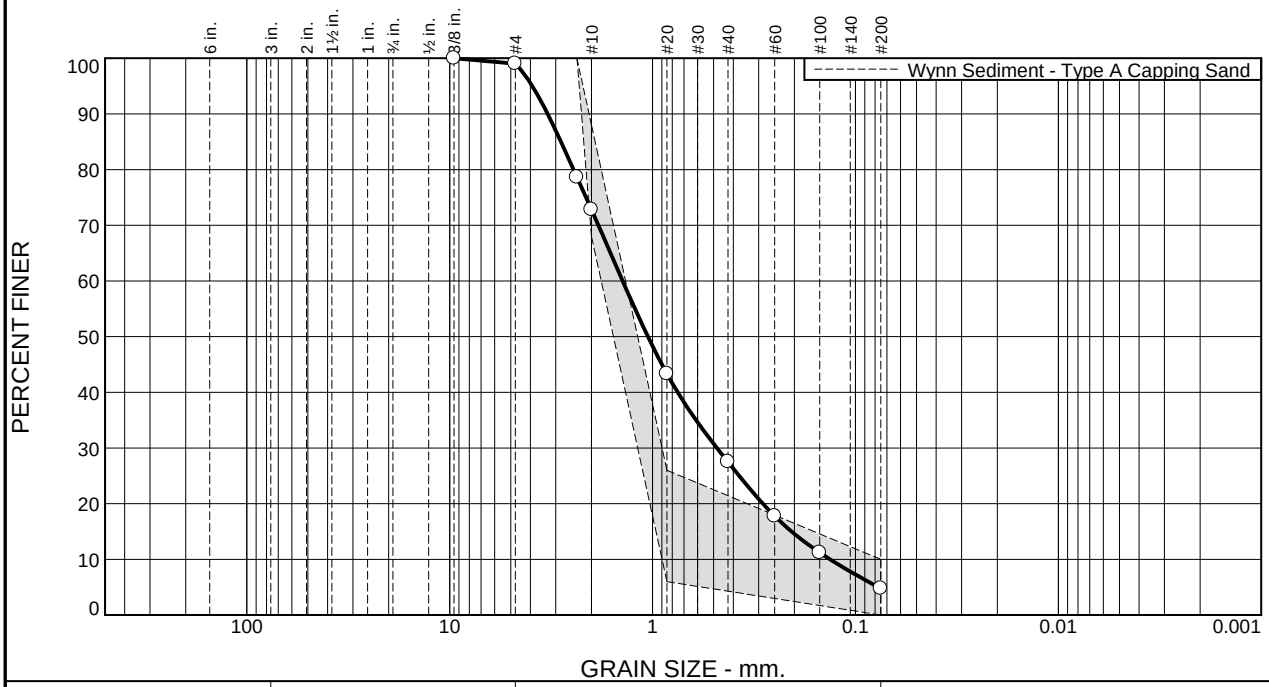
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 026

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.0 | 26.2 | 45.3 | 22.7 | 4.8 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.0 | | |
| #8 | 78.6 | 100.0 | X |
| #10 | 72.8 | 68.0 - 88.0 | |
| #20 | 43.3 | 6.0 - 26.0 | X |
| #40 | 27.5 | | |
| #60 | 17.8 | | |
| #100 | 11.2 | | |
| #200 | 4.8 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.2887 $D_{85}$= 2.8287 $D_{60}$= 1.4046
$D_{50}$= 1.0540 $D_{30}$= 0.4816 $D_{15}$= 0.2065
$D_{10}$= 0.1334 $C_u$= 10.53 $C_c$= 1.24

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

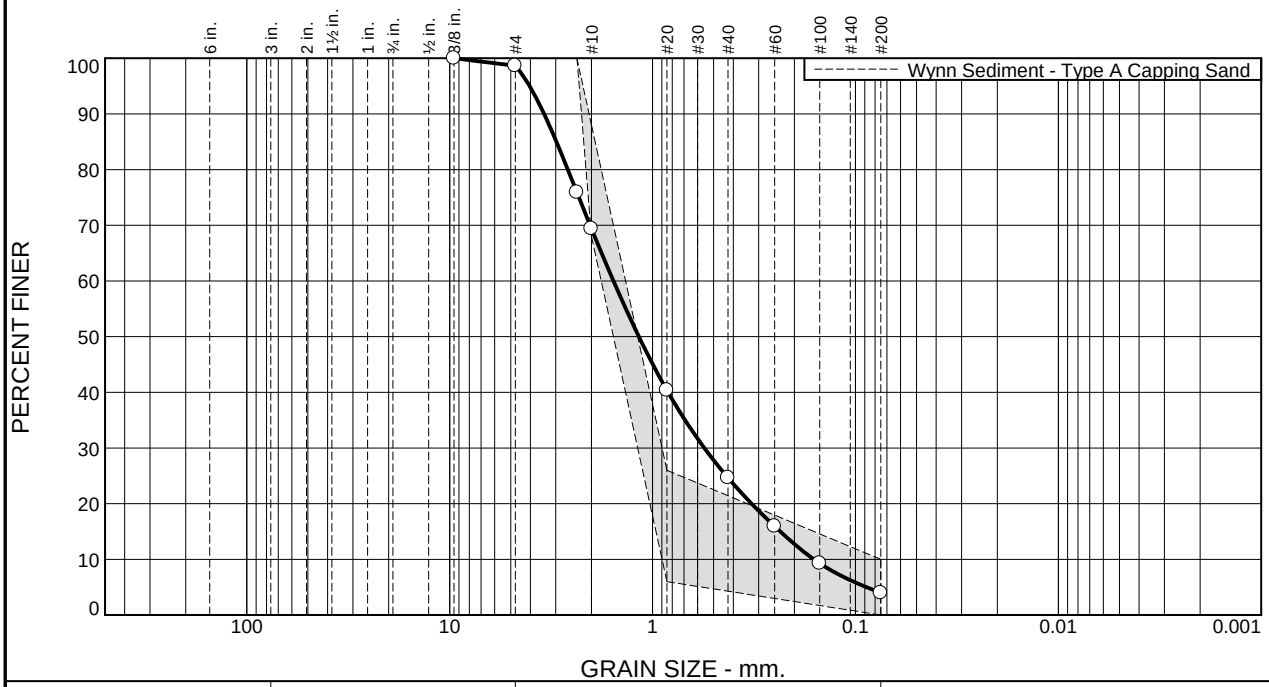
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 027

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.3 | 29.3 | 44.7 | 20.7 | 4.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.7 | | |
| #8 | 75.9 | 100.0 | X |
| #10 | 69.4 | 68.0 - 88.0 | |
| #20 | 40.4 | 6.0 - 26.0 | X |
| #40 | 24.7 | | |
| #60 | 15.9 | | |
| #100 | 9.3 | | |
| #200 | 4.0 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4235 $D_{85}$= 2.9777 $D_{60}$= 1.5589
$D_{50}$= 1.1681 $D_{30}$= 0.5557 $D_{15}$= 0.2349
$D_{10}$= 0.1603 $C_u$= 9.72 $C_c$= 1.24

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

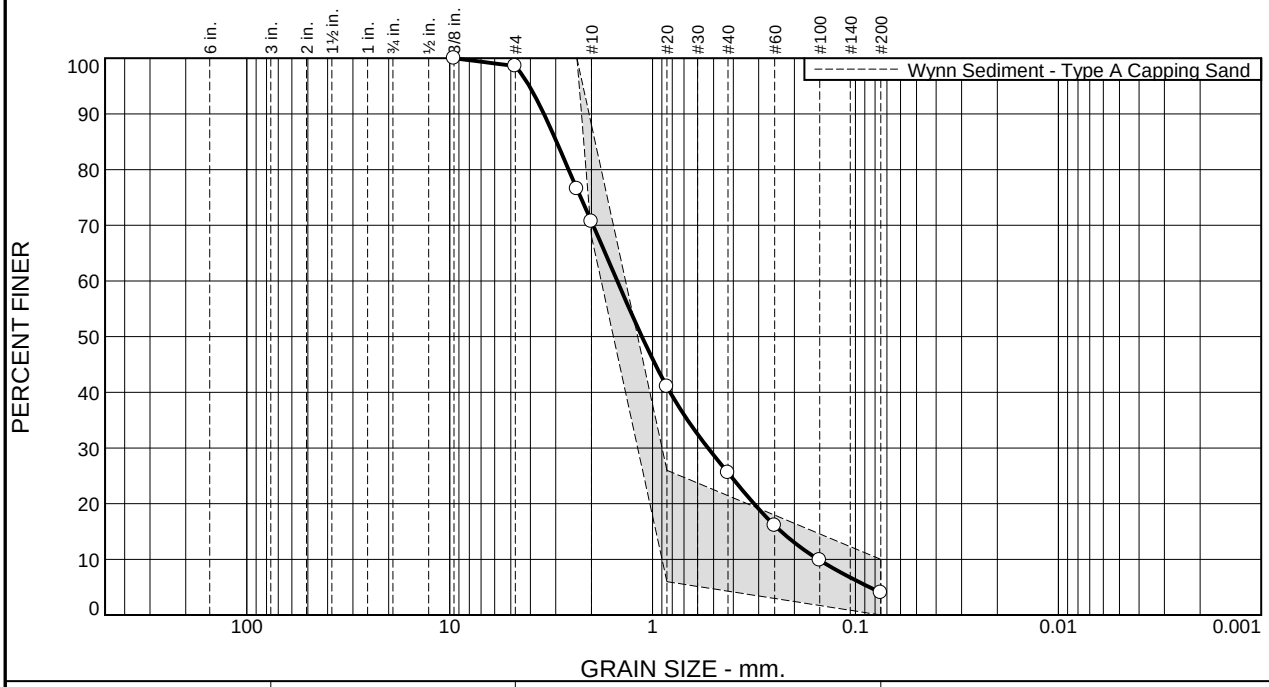
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 028

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-04

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.4 | 27.9 | 45.1 | 21.6 | 4.0 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.6 | | |
| #8 | 76.5 | 100.0 | X |
| #10 | 70.7 | 68.0 - 88.0 | |
| #20 | 41.0 | 6.0 - 26.0 | X |
| #40 | 25.6 | | |
| #60 | 16.1 | | |
| #100 | 9.8 | | |
| #200 | 4.0 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4301 $D_{85}$= 2.9724 $D_{60}$= 1.4932
$D_{50}$= 1.1286 $D_{30}$= 0.5329 $D_{15}$= 0.2326
$D_{10}$= 0.1525 $C_u$= 9.79 $C_c$= 1.25

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

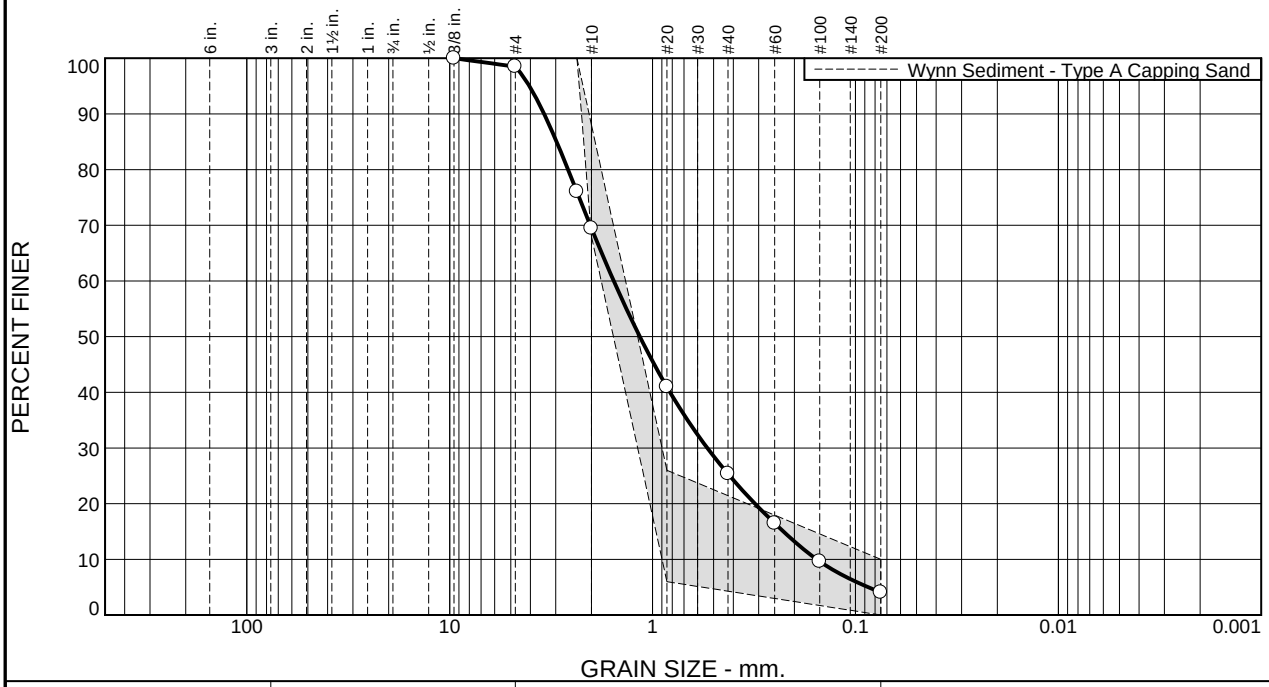
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 029

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-05

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.5 | 29.0 | 44.1 | 21.3 | 4.1 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.5 | | |
| #8 | 76.0 | 100.0 | X |
| #10 | 69.5 | 68.0 - 88.0 | |
| #20 | 41.0 | 6.0 - 26.0 | X |
| #40 | 25.4 | | |
| #60 | 16.5 | | |
| #100 | 9.6 | | |
| #200 | 4.1 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4223 $D_{85}$= 2.9712 $D_{60}$= 1.5537
$D_{50}$= 1.1555 $D_{30}$= 0.5373 $D_{15}$= 0.2265
$D_{10}$= 0.1552 $C_u$= 10.01 $C_c$= 1.20

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

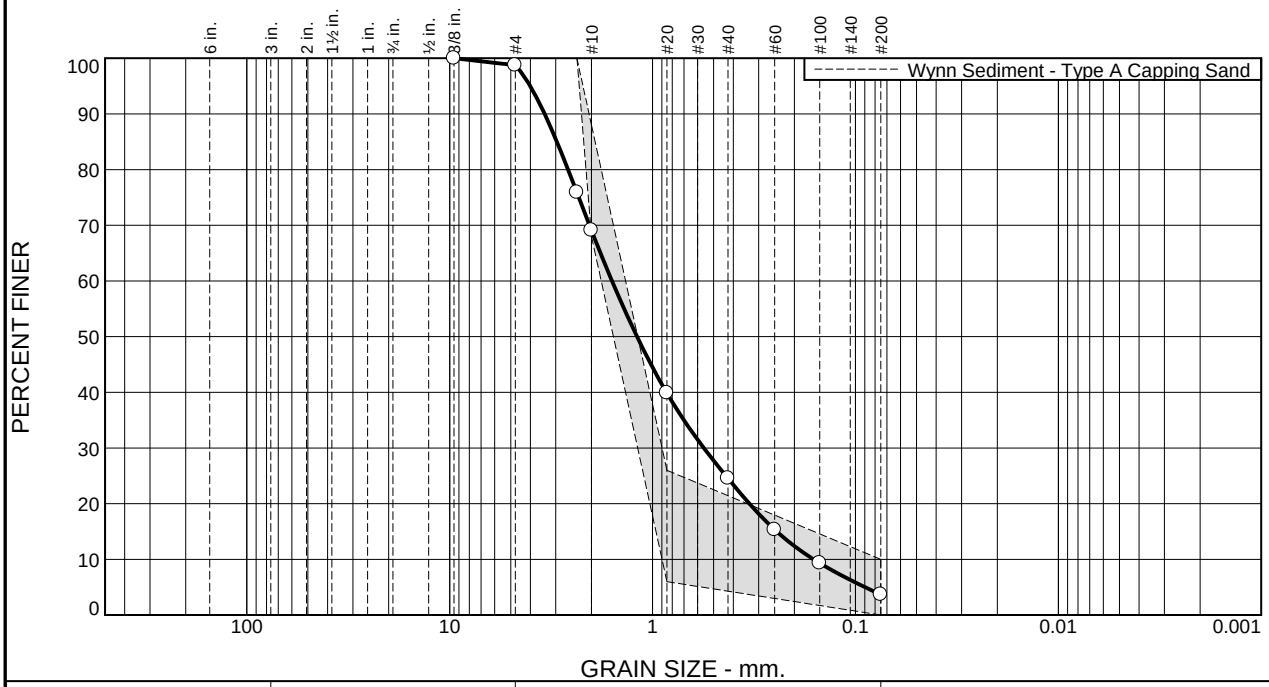
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 030

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-06

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.2 | 29.7 | 44.6 | 20.8 | 3.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.8 | | |
| #8 | 75.9 | 100.0 | X |
| #10 | 69.1 | 68.0 - 88.0 | |
| #20 | 39.9 | 6.0 - 26.0 | X |
| #40 | 24.5 | | |
| #60 | 15.3 | | |
| #100 | 9.3 | | |
| #200 | 3.7 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.4019 $D_{85}$= 2.9621 $D_{60}$= 1.5849
$D_{50}$= 1.1927 $D_{30}$= 0.5590 $D_{15}$= 0.2446
$D_{10}$= 0.1608 $C_u$= 9.85 $C_c$= 1.23

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

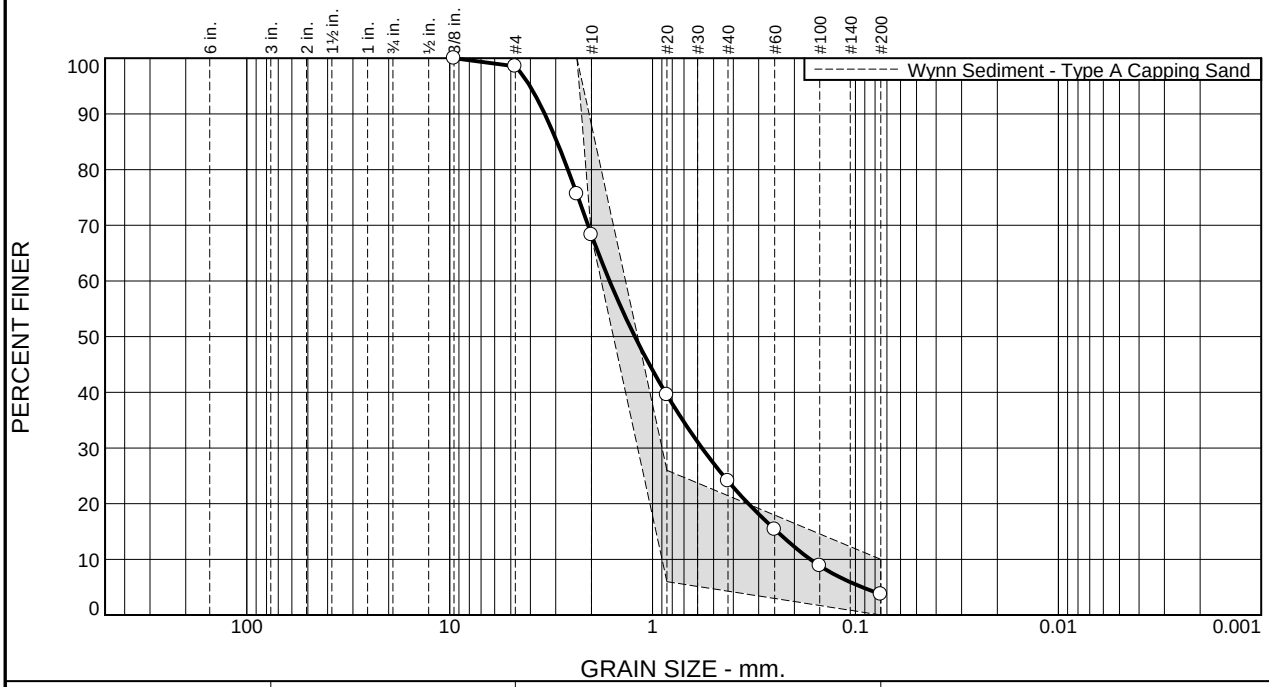
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 031

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-07

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.5 | 30.2 | 44.2 | 20.4 | 3.7 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.5 | | |
| #8 | 75.6 | 100.0 | X |
| #10 | 68.3 | 68.0 - 88.0 | |
| #20 | 39.5 | 6.0 - 26.0 | X |
| #40 | 24.1 | | |
| #60 | 15.4 | | |
| #100 | 8.8 | | |
| #200 | 3.7 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.3989 $D_{85}$= 2.9591 $D_{60}$= 1.6294
$D_{50}$= 1.2218 $D_{30}$= 0.5708 $D_{15}$= 0.2436
$D_{10}$= 0.1668 $C_u$= 9.77 $C_c$= 1.20

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

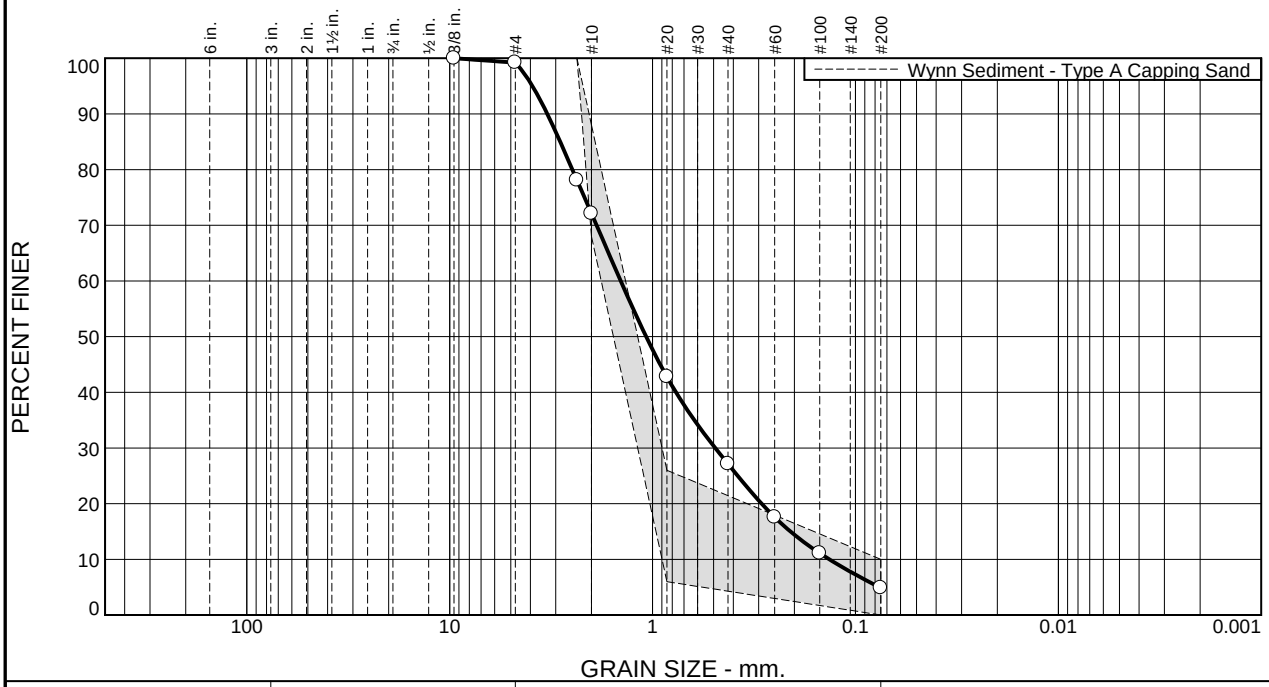
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 032

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-08

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 0.8 | 27.1 | 44.9 | 22.3 | 4.9 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 99.2 | | |
| #8 | 78.1 | 100.0 | X |
| #10 | 72.1 | 68.0 - 88.0 | |
| #20 | 42.8 | 6.0 - 26.0 | X |
| #40 | 27.2 | | |
| #60 | 17.6 | | |
| #100 | 11.1 | | |
| #200 | 4.9 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.3009 $D_{85}$= 2.8526 $D_{60}$= 1.4356
$D_{50}$= 1.0756 $D_{30}$= 0.4909 $D_{15}$= 0.2092
$D_{10}$= 0.1346 $C_u$= 10.67 $C_c$= 1.25

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

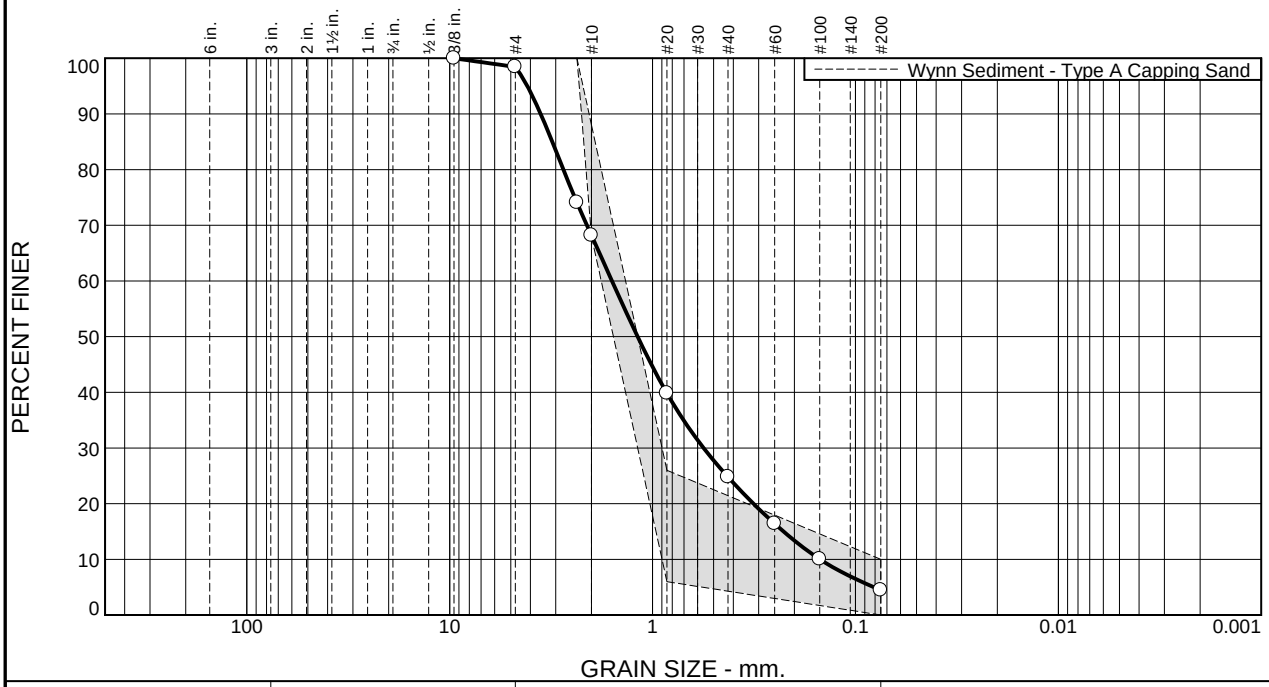
**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 033

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-09

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 1.6 | 30.2 | 43.4 | 20.3 | 4.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.375" | 100.0 | | |
| #4 | 98.4 | | |
| #8 | 74.1 | 100.0 | X |
| #10 | 68.2 | 68.0 - 88.0 | |
| #20 | 39.8 | 6.0 - 26.0 | X |
| #40 | 24.8 | | |
| #60 | 16.4 | | |
| #100 | 10.0 | | |
| #200 | 4.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Brown well-graded sand

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-b

**Coefficients**

$D_{90}$= 3.5593 $D_{85}$= 3.1199 $D_{60}$= 1.5848
$D_{50}$= 1.1846 $D_{30}$= 0.5605 $D_{15}$= 0.2261
$D_{10}$= 0.1496 $C_u$= 10.59 $C_c$= 1.32

**Remarks**

**Date Received:** 12.15.17 **Date Tested:** 12.19.17

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Type A Capping Sand **Depth:** Stockpile **Date Sampled:** 12.14.17
**Sample Number:** Type A - 034

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1712348 **Figure** 1712348-10

# SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
**ESS Project No. 1712348**
Project Manager Marc Levesque
Date Received 12/14/2017 (by )

Client Company Charter
Client Email
Site Location
Date Assigned 12/14/2017

Collected By
Date Required 12/19/2017

| Sample Information | | | | Lab No. | Identification Tests | | | | | | | | Permeability | | Compaction | | | Soil Strength | | | Consol. | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring/ Test Pit No. | Sample or depth | Sample date | ESS Sample ID | | Water Cont. % | LL & PL % | Org. % | Bulk | Sieve -200 % | Hyd -2μ % | $G_s$ | Tube Density | Sand | Clay | Mod. | Std. | CBR | Un-con-fined | UU | CIU | Stand ard | E.O.P. | |
| | | | | | D2216 | D4318 | D2974 | | D422 | | D854 | | D2434 | D5084 | D1557 | D698 | D1883 | D2166 | D2850 | D4767 | D2435 | D2435 | # |
| Type A - Capping Sand - 025 | | 12/14/17 | 1712348-01 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 026 | | 12/14/17 | 1712348-02 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 027 | | 12/14/17 | 1712348-03 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 028 | | 12/14/17 | 1712348-04 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 029 | | 12/14/17 | 1712348-05 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 030 | | 12/14/17 | 1712348-06 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 031 | | 12/14/17 | 1712348-07 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 032 | | 12/14/17 | 1712348-08 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 033 | | 12/14/17 | 1712348-09 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A - Capping Sand - 034 | | 12/14/17 | 1712348-10 | | X | | | | X | | | | | | | | | | | | | | ** |

Notes: ** = D2487 Material Classification

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1712348
Date Received: 12/14/2017
Project Due Date: 12/21/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? NA
   Temp: N/A Iced with: None
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? (Yes) / No 12/14/17
    ESS Sample IDs: 1-10
    Analysis: Dioxin, grain size, water %, classification
    TAT: 5 day
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? (Yes) / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: 12/14/17 Time: 1552 By:

Sample Receiving Notes:

**Samples on hold** 12/14/17

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

| Sample Number | Container ID | Proper Container | Air Bubbles Present | Sufficient Volume | Container Type | Preservative | Record pH (Cyanide and 608 Pesticides) |
|---|---|---|---|---|---|---|---|
| 01 | 190914 | Yes | NA | Yes | Other | NP | |
| 01 | 191002 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 01 | 191021 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 191022 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 01 | 191041 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 191042 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 01 | 191052 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 02 | 190913 | Yes | NA | Yes | Other | NP | |
| 02 | 191001 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 02 | 191019 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 191020 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 02 | 191039 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 191040 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 02 | 191051 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 03 | 190912 | Yes | NA | Yes | Other | NP | |
| 03 | 191000 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 03 | 191017 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 191018 | Yes | NA | Yes | VOA Vial - Other | Other | |
| 03 | 191037 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 191038 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP | |
| 03 | 191050 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP | |
| 04 | 190911 | Yes | NA | Yes | Other | NP | |
| 04 | 190999 | Yes | NA | Yes | VOA Vial - Methanol | MeOH | |
| 04 | 191015 | Yes | NA | Yes | VOA Vial - Other | Other | |

# ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/ML

ESS Project ID: 1712348

Date Received: 12/14/2017

| | | | | | | |
|---|---|---|---|---|---|---|
| 04 | 191016 | Yes | NA | Yes | VOA Vial - Other | Other |
| 04 | 191035 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 191036 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 04 | 191049 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 05 | 190910 | Yes | NA | Yes | Other | NP |
| 05 | 190998 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 05 | 191013 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 191014 | Yes | NA | Yes | VOA Vial - Other | Other |
| 05 | 191033 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 191034 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 05 | 191048 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 06 | 190909 | Yes | NA | Yes | Other | NP |
| 06 | 190997 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 06 | 191011 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 191012 | Yes | NA | Yes | VOA Vial - Other | Other |
| 06 | 191031 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 191032 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 06 | 191047 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 07 | 190908 | Yes | NA | Yes | Other | NP |
| 07 | 190996 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 07 | 191009 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 191010 | Yes | NA | Yes | VOA Vial - Other | Other |
| 07 | 191029 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 191030 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 07 | 191046 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 08 | 190907 | Yes | NA | Yes | Other | NP |
| 08 | 190995 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 08 | 191007 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 191008 | Yes | NA | Yes | VOA Vial - Other | Other |
| 08 | 191027 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 191028 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 08 | 191045 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 09 | 190906 | Yes | NA | Yes | Other | NP |
| 09 | 190994 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 09 | 191005 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 191006 | Yes | NA | Yes | VOA Vial - Other | Other |
| 09 | 191025 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 191026 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 09 | 191044 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |
| 10 | 190905 | Yes | NA | Yes | Other | NP |
| 10 | 190993 | Yes | NA | Yes | VOA Vial - Methanol | MeOH |
| 10 | 191003 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 191004 | Yes | NA | Yes | VOA Vial - Other | Other |
| 10 | 191023 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 191024 | Yes | NA | Yes | 8 oz. Jar - Unpres | NP |
| 10 | 191043 | Yes | NA | Yes | 4 oz. Jar - Unpres | NP |

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: _____ Date & Time: 12/14/17 1710

Reviewed By: _____ Date & Time: 12/14/17 1827

Delivered By: _____ 12/14/17 1827

Changes made 12/15/17 - ML

# ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

## CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712348 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑ Limit Checker ☐ Standard Excel ☐ Other (Please Specify →) |

Is this project for any of the following?: ○ CT RCP ◉ MA MCP ○ RGP

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 12/14/17 | 9:30 AM | Grab | Soil | Type A - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 12/14/17 | 9:34 AM | Grab | Soil | Type A - Capping Sand - 026 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 12/14/17 | 9:38 AM | Grab | Soil | Type A - Capping Sand - 027 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 12/14/17 | 9:42 AM | Grab | Soil | Type A - Capping Sand - 028 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 12/14/17 | 9:46 AM | Grab | Soil | Type A - Capping Sand - 029 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 12/14/17 | 9:50 AM | Grab | Soil | Type A - Capping Sand - 030 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 12/14/17 | 9:54 AM | Grab | Soil | Type A - Capping Sand - 031 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 12/14/17 | 9:58 AM | Grab | Soil | Type A - Capping Sand - 032 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 12/14/17 | 10:02 AM | Grab | Soil | Type A - Capping Sand - 033 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 12/14/17 | 10:06 AM | Grab | Soil | Type A - Capping Sand - 034 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tin ice 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Run gradation on Cap A first.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/14 | [signature] 12/14/17 12pm | [signature] 12/14/17 15:34 | [signature] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton, SPS | | | |

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY

| | |
|---|---|
| ESS Lab # | 1712348 |
| Turn Time | 5-Day Rush |
| Regulatory State | |
| Reporting Limits | S-1 |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

Analysis

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 12/14/17 | 9:30 AM | Grab | Soil | Type A - Capping Sand - 025 | X | X | X | X | X | X | X | X | X | X | X |
| 02 | 12/14/17 | 9:34 AM | Grab | Soil | Type A - Capping Sand - 026 | X | X | X | X | X | X | X | X | X | X | X |
| 03 | 12/14/17 | 9:38 AM | Grab | Soil | Type A - Capping Sand - 027 | X | X | X | X | X | X | X | X | X | X | X |
| 04 | 12/14/17 | 9:42 AM | Grab | Soil | Type A - Capping Sand - 028 | X | X | X | X | X | X | X | X | X | X | X |
| 05 | 12/14/17 | 9:46 AM | Grab | Soil | Type A - Capping Sand - 029 | X | X | X | X | X | X | X | X | X | X | X |
| 06 | 12/14/17 | 9:50 AM | Grab | Soil | Type A - Capping Sand - 030 | X | X | X | X | X | X | X | X | X | X | X |
| 07 | 12/14/17 | 9:54 AM | Grab | Soil | Type A - Capping Sand - 031 | X | X | X | X | X | X | X | X | X | X | X |
| 08 | 12/14/17 | 9:58 AM | Grab | Soil | Type A - Capping Sand - 032 | X | X | X | X | X | X | X | X | X | X | X |
| 09 | 12/14/17 | 10:02 AM | Grab | Soil | Type A - Capping Sand - 033 | X | X | X | X | X | X | X | X | X | X | X |
| 10 | 12/14/17 | 10:06 AM | Grab | Soil | Type A - Capping Sand - 034 | X | X | X | X | X | X | X | X | X | X | X |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*

**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*

**Number of Containers per Sample:**

**Laboratory Use Only**

Cooler Present:

Seals Intact: Tim ice 3.3

Cooler Temperature: °C

**Sampled by :** Aggregate Industries QC

**Comments:** **Please specify "Other" preservative and containers types in this space**

Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.

Run gradation on Cap A first.

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| [signature] 12/14 | [signature] 12/14/17 12pm | [signature] 12/14/17 1534 | [signature] 12/14/17 1543 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| Devon Wilton, SPS | | | |

*CERTIFICATE OF ANALYSIS*

Katherine Mason
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

**RE: Wynn Boston Harbor Backfill (454)**
**ESS Laboratory Work Order Number: 1801266**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

**REVIEWED**
**By ESS Laboratory at 5:49 pm, Jan 19, 2018**

**Analytical Summary**
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

**Subcontracted Analyses**
CTS - Cranston, RI — Grain Size Analysis, Soil Classification, Water Content

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

## SAMPLE RECEIPT

The following samples were received on January 16, 2018 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

**The client did not deliver the samples in a cooler.**

| Lab Number | Sample Name | Matrix | Analysis |
|---|---|---|---|
| 1801266-01 | Type A Blend - Capping Sand - 001 | Soil | § |
| 1801266-02 | Type A Blend - Capping Sand - 002 | Soil | § |
| 1801266-03 | Type A Blend - Capping Sand - 003 | Soil | § |
| 1801266-04 | Type A Blend - Capping Sand - 004 | Soil | § |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

## PROJECT NARRATIVE

**No unusual observations noted.**

**End of Project Narrative.**

## DATA USABILITY LINKS

***To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.***

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

## CURRENT SW-846 METHODOLOGY VERSIONS

**Analytical Methods**

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

**Prep Methods**

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

## Classical Chemistry

Client Sample ID: Type A Blend - Capping Sand - 001
Date Sampled: 01/16/18 12:30

ESS Laboratory Sample ID: 1801266-01
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A Blend - Capping Sand - 002
Date Sampled: 01/16/18 12:35

ESS Laboratory Sample ID: 1801266-02
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A Blend - Capping Sand - 003
Date Sampled: 01/16/18 12:40

ESS Laboratory Sample ID: 1801266-03
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

Client Sample ID: Type A Blend - Capping Sand - 004
Date Sampled: 01/16/18 12:45

ESS Laboratory Sample ID: 1801266-04
Sample Matrix: Soil

| Analyte | Results | Units | MRL | Method | DF | Analyst | Analyzed |
|---|---|---|---|---|---|---|---|
| **Grain Size** | **See Attached** | | | | | | |
| **Soil Classification** | **See Attached** | | | | | | |
| **Water by Distillation** | **See Attached** | | | | | | |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill
ESS Laboratory Work Order: 1801266

**Notes and Definitions**

| | |
|---|---|
| Z-08 | See Attached |
| ND | Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes |
| dry | Sample results reported on a dry weight basis |
| RPD | Relative Percent Difference |
| MDL | Method Detection Limit |
| MRL | Method Reporting Limit |
| LOD | Limit of Detection |
| LOQ | Limit of Quantitation |
| DL | Detection Limit |
| I/V | Initial Volume |
| F/V | Final Volume |
| § | Subcontracted analysis; see attached report |
| 1 | Range result excludes concentrations of surrogates and/or internal standards eluting in that range. |
| 2 | Range result excludes concentrations of target analytes eluting in that range. |
| 3 | Range result excludes the concentration of the C9-C10 aromatic range. |
| Avg | Results reported as a mathematical average. |
| NR | No Recovery |
| [CALC] | Calculated Analyte |
| SUB | Subcontracted analysis; see attached report |
| RL | Reporting Limit |
| EDL | Estimated Detection Limit |

*CERTIFICATE OF ANALYSIS*

Client Name: Charter Contracting Company
Client Project ID: Wynn Boston Harbor Backfill

ESS Laboratory Work Order: 1801266

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

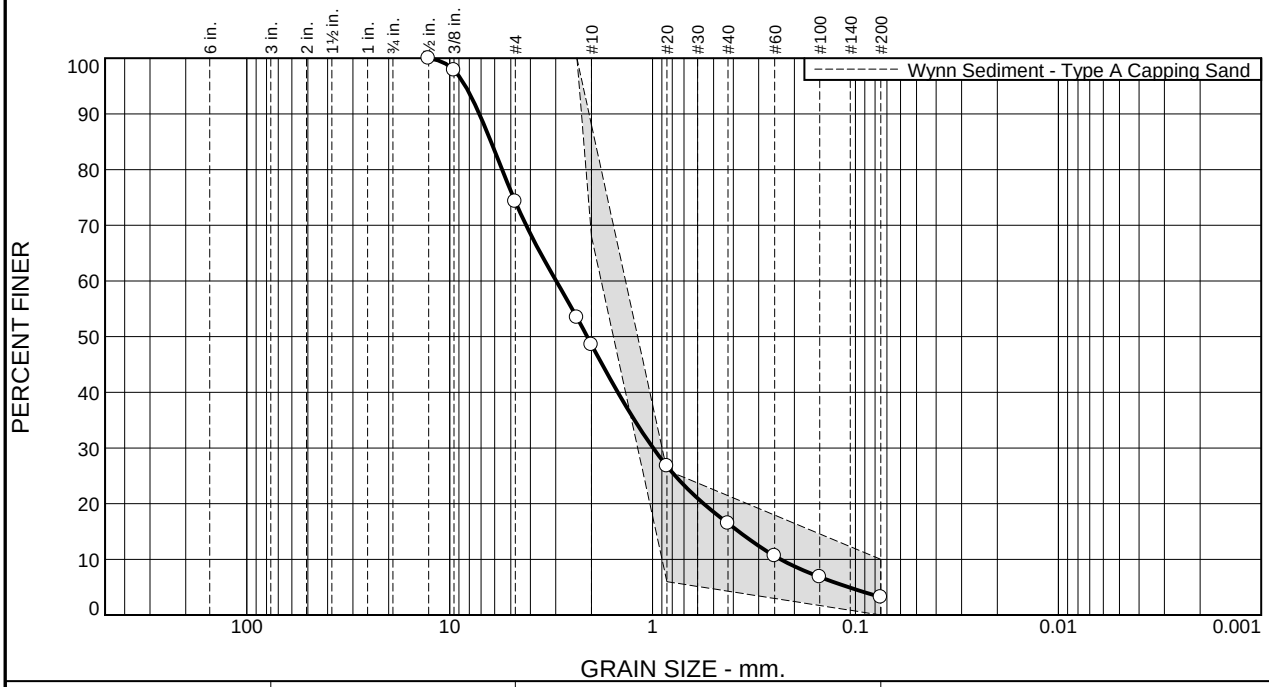
| THIELSCH ENGINEERING | 195 Frances Avenue<br>Cranston RI, 02910<br>Phone: (401)-467-6454<br>Fax: (401)-467-2398<br>http://www.thielsch.com | Client Information:<br>Charter Contracting<br>Boston, MA<br>PM: Marc Levesque<br>Assigned By:<br>Marc Levesque | Laboratory Information<br>Project Name:<br>**Wynn Boston Harbor Sediment Remediation**<br>**Boston, MA**<br>ESS Project Number: 1801266<br>Report Date: 01.19.18 |
|---|---|---|---|

# LABORATORY TESTING DATA SHEET

| Material | ESS .Sample No. | Depth (ft) | CTS Laboratory No. | Identification Tests | | | | | | | Density | | Strength Tests | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Water Content % | LL % | PL % | Gravel % | Sand % | Fines % | Org. % | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) | $\gamma_d$ MAX (pcf) $W_{opt}$ (%) Corrected | CBR Setup as % of Proctor | CBR Dry unit wt. pcf | CBR Water Content % | CBR @ 0.1" @ 0.2" | Laboratory Log and Soil Description |
| Type A Blend 001 | 1801266-01 | Stock | 18-S-069 | 2.3 | | | 25.8 | 71.0 | 3.2 | | | | | | | | Grey well-graded sand with gravel (SW) |
| Type A Blend 002 | 1801266-02 | Stock | 18-S-070 | 3.2 | | | 30.1 | 67.4 | 2.5 | | | | | | | | Grey well-graded sand with gravel (SW) |
| Type A Blend 003 | 1801266-03 | Stock | 18-S-071 | 3.0 | | | 26.0 | 70.8 | 3.2 | | | | | | | | Grey well-graded sand with gravel (SW) |
| Type A Blend 004 | 1801266-04 | Stock | 18-S-072 | 1.5 | | | 37.8 | 60.7 | 1.5 | | | | | | | | Grey poorly-graded sand with gravel (SP) |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Reviewed By _____ Date Reviewed: 01.19.18

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 25.8 | 25.6 | 32.1 | 13.3 | 3.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 97.9 | | |
| #4 | 74.2 | | |
| #8 | 53.4 | 100.0 | X |
| #10 | 48.6 | 68.0 - 88.0 | X |
| #20 | 26.8 | 6.0 - 26.0 | X |
| #40 | 16.5 | | |
| #60 | 10.6 | | |
| #100 | 6.8 | | |
| #200 | 3.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Grey well-graded sand with gravel

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 7.1440 $D_{85}$= 6.2568 $D_{60}$= 2.9853
$D_{50}$= 2.0994 $D_{30}$= 0.9938 $D_{15}$= 0.3763
$D_{10}$= 0.2339 $C_u$= 12.76 $C_c$= 1.41

**Remarks**

**Date Received:** 01.17.18 **Date Tested:** 01.19.18

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

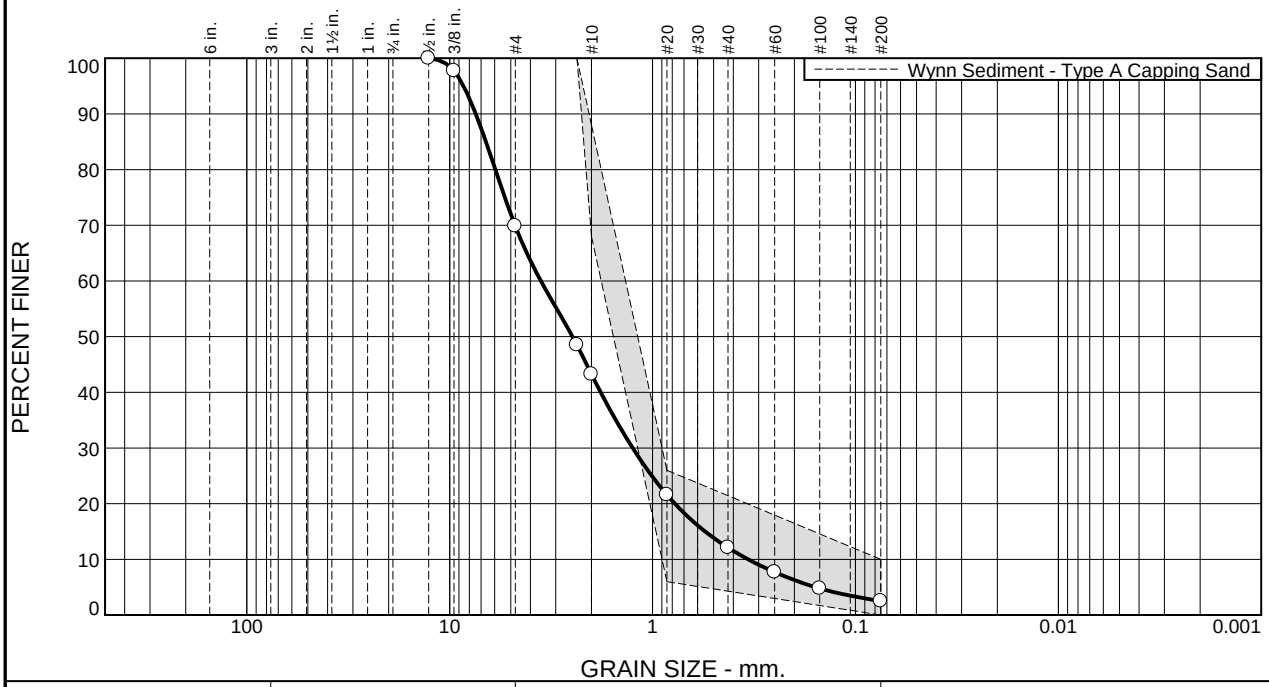
**Source of Sample:** Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
**Sample Number:** Type A Blend - 001

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1801266 **Figure** 1801266-01

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 30.1 | 26.7 | 31.1 | 9.6 | 2.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 97.7 | | |
| #4 | 69.9 | | |
| #8 | 48.5 | 100.0 | X |
| #10 | 43.2 | 68.0 - 88.0 | X |
| #20 | 21.6 | 6.0 - 26.0 | |
| #40 | 12.1 | | |
| #60 | 7.7 | | |
| #100 | 4.8 | | |
| #200 | 2.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Grey well-graded sand with gravel

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 7.4378 $D_{85}$= 6.6298 $D_{60}$= 3.5522
$D_{50}$= 2.4815 $D_{30}$= 1.2534 $D_{15}$= 0.5507
$D_{10}$= 0.3378 $C_u$= 10.51 $C_c$= 1.31

**Remarks**

**Date Received:** 01.17.18 **Date Tested:** 01.19.18

**Tested By:** JF

**Checked By:** Matthew Colman, P.E.

**Title:** Laboratory Manager

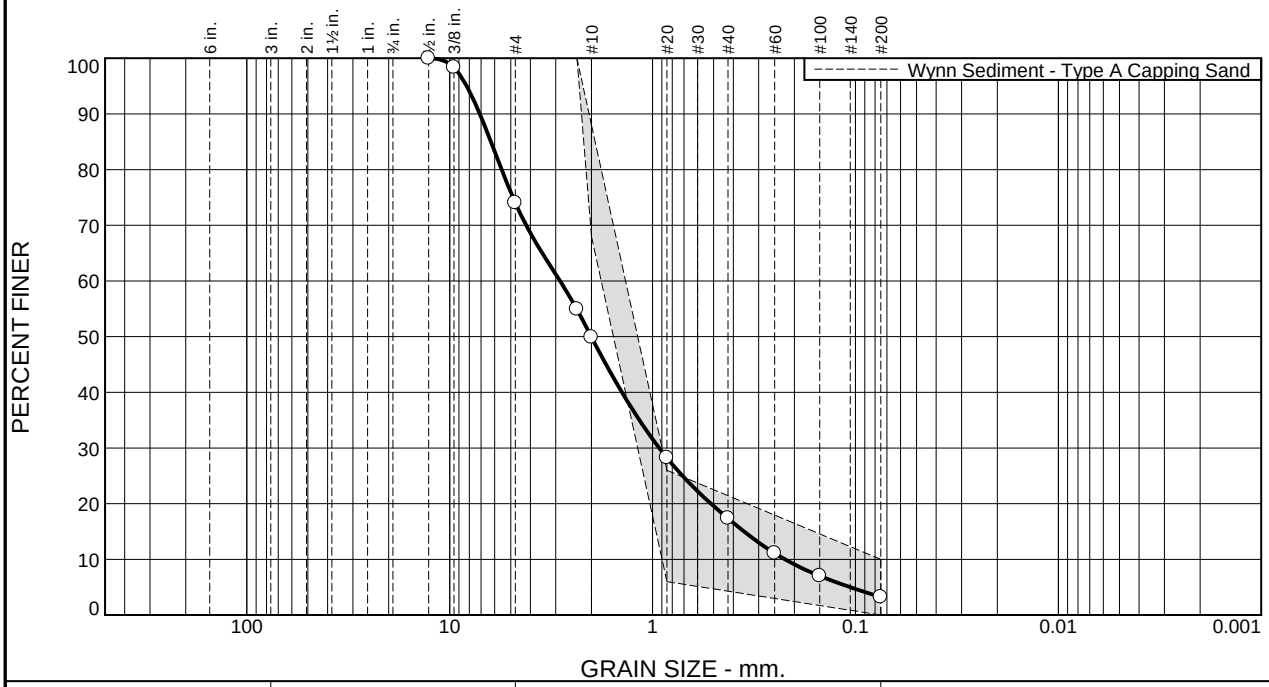
**Source of Sample:** Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
**Sample Number:** Type A Blend - 002

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1801266 **Figure** 1801266-02

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 26.0 | 24.1 | 32.5 | 14.2 | 3.2 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 98.3 | | |
| #4 | 74.0 | | |
| #8 | 54.9 | 100.0 | X |
| #10 | 49.9 | 68.0 - 88.0 | X |
| #20 | 28.2 | 6.0 - 26.0 | X |
| #40 | 17.4 | | |
| #60 | 11.1 | | |
| #100 | 7.0 | | |
| #200 | 3.2 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Grey well-graded sand with gravel

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 7.1053 $D_{85}$= 6.2618 $D_{60}$= 2.8581
$D_{50}$= 2.0071 $D_{30}$= 0.9275 $D_{15}$= 0.3537
$D_{10}$= 0.2228 $C_u$= 12.83 $C_c$= 1.35

**Remarks**

**Date Received:** 01.17.18 **Date Tested:** 01.19.18

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

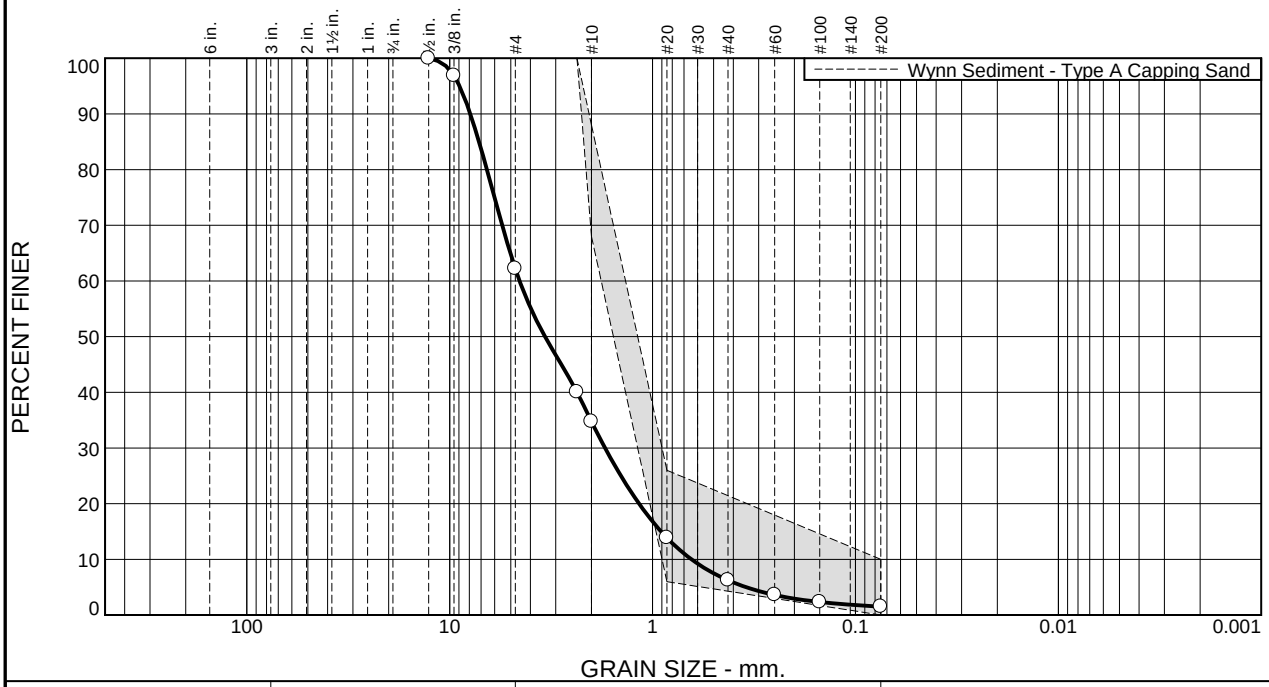
**Source of Sample:** Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
**Sample Number:** Type A Blend - 003

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1801266 **Figure** 1801266-03

# Particle Size Distribution Report




| % +3" | % Gravel | | % Sand | | | % Fines | |
|---|---|---|---|---|---|---|---|
| | Coarse | Fine | Coarse | Medium | Fine | Silt | Clay |
| 0.0 | 0.0 | 37.8 | 27.5 | 28.4 | 4.8 | 1.5 | |

**Test Results (D6913 & ASTM D 1140)**

| Opening Size | Percent Finer | Spec.* (Percent) | Pass? (X=Fail) |
|---|---|---|---|
| 0.5" | 100.0 | | |
| 0.375" | 96.9 | | |
| #4 | 62.2 | | |
| #8 | 40.0 | 100.0 | X |
| #10 | 34.7 | 68.0 - 88.0 | X |
| #20 | 13.9 | 6.0 - 26.0 | |
| #40 | 6.3 | | |
| #60 | 3.6 | | |
| #100 | 2.3 | | |
| #200 | 1.5 | 0.0 - 10.0 | |

* Wynn Sediment - Type A Capping Sand

**Material Description**

Grey poorly graded sand with gravel

**Atterberg Limits (ASTM D 4318)**

**PL=** NP **LL=** NV **PI=** NP

**Classification**

**USCS (D 2487)=** SW **AASHTO (M 145)=** A-1-a

**Coefficients**

$D_{90}$= 7.9124 $D_{85}$= 7.1696 $D_{60}$= 4.5225
$D_{50}$= 3.3877 $D_{30}$= 1.7147 $D_{15}$= 0.9083
$D_{10}$= 0.6432 $C_u$= 7.03 $C_c$= 1.01

**Remarks**

**Date Received:** 01.17.18 **Date Tested:** 01.19.18

**Tested By:** JF

**Checked By:** Matthew Colman P.E.

**Title:** Laboratory Manager

**Source of Sample:** Type A Capping Sand - Blend **Depth:** Stockpile **Date Sampled:** 01.16.18
**Sample Number:** Type A Blend - 004

**Thielsch Engineering Inc.**

**Cranston, RI**

**Client:** ESS / Charter Contracting
**Project:** Wynn Boston Harbor Sediment Remediation
Boston, MA
**Project No:** 1801266 **Figure** 1801266-04

# SOILS LABORATORY TESTING ASSIGNMENT SHEET

THIELSCH ENGINEERING
195 Frances Ave., Cranston, RI 02910
401-467-6454

Project Name **Wynn**
**ESS Project No.** **1801266**
Project Manager Marc Levesque
Date Received 1/16/2018 (by )

Client Company Charter
Client Email
Site Location
Date Assigned 1/16/2018

Collected By
Date Required 1/18/2018

| Sample Information | | | | | Identification Tests | | | | | | | | Permeability | | Compaction | | | Soil Strength | | | Consol. | | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring/ Test Pit No. | Sample or depth | Sample date | ESS Sample ID | Lab No. | Water Cont. % | LL & PL % | Org. % | Bulk | Sieve -200 % | Hyd -2μ % | $G_s$ | Tube Den-sity | Sand | Clay | Mod. | Std. | CBR | Un-con-fined | UU | CIU | Stand ard | E.O.P. | |
| | | | | | D2216 | D4318 | D2974 | | D422 | | D854 | | D2434 | D5084 | D1557 | D698 | D1883 | D2166 | D2850 | D4767 | D2435 | D2435 | # |
| Type A Blend - Capping Sand - 001 | | 1/16/18 | 1801266-01 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A Blend - Capping Sand - 002 | | 1/16/18 | 1801266-02 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A Blend - Capping Sand - 003 | | 1/16/18 | 1801266-03 | | X | | | | X | | | | | | | | | | | | | | ** |
| Type A Blend - Capping Sand - 004 | | 1/16/18 | 1801266-04 | | X | | | | X | | | | | | | | | | | | | | ** |

Notes: ** = D2487 Material Classification

ESS Laboratory

*Division of Thielsch Engineering, Inc.*
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

# CHAIN OF CUSTODY 2 day

| | |
|---|---|
| Turn Time | 5-Day Rush per ML |
| Regulatory State | |
| Is this project for any of the following?: | ○CT RCP ◉MA MCP ○RGP |
| ESS Lab # | 1801266 |
| Reporting Limits | S-1 |
| Electonic Deliverables | ☑Limit Checker ☐Standard Excel ☐Other (Please Specify →) |

| Company Name | Project # | Project Name |
|---|---|---|
| Charter / SPS New England | 454 | Wynn Backfill |

| Contact Person | Address |
|---|---|
| Katherine Mason | 500 Harrison Ave, Suite 4R |

| City | State | Zip Code | PO # |
|---|---|---|---|
| Boston | MA | 02118 | 454.0029 |

| Telephone Number | FAX Number | Email Address |
|---|---|---|
| | | kmason@charter.us |

| ESS Lab ID | Collection Date | Collection Time | Sample Type | Sample Matrix | Sample ID | VOC 8260 | SVOC 8270 | PCB 8082 | Pesticides 8081 | Herbicides 8151 | TOC 9060 | MCP 14 6000/7000 | Dioxins 8290 | Grain Size D422 | Material Classification D2487 | Moisture Content D2216 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 01/16/18 | 12:30 PM | Grab | Soil | Type A Blend - Capping Sand - 001 | X | X | X | X | X | X | X | X | X | X | X | | | | |
| 02 | 01/16/18 | 12:35 PM | Grab | Soil | Type A Blend - Capping Sand - 002 | X | X | X | X | X | X | X | X | X | X | X | | DJ 1/17/18 | | |
| 03 | 01/16/18 | 12:40 PM | Grab | Soil | Type A Blend - Capping Sand - 003 | X | X | X | X | X | X | X | X | X | X | X | | | | |
| 04 | 01/16/18 | 12:45 PM | Grab | Soil | Type A Blend - Capping Sand - 004 | X | X | X | X | X | X | X | X | X | X | X | | | | |
| | | | | | TB Vials | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

**Container Type:** AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
**Container Volume:** 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
**Preservation Code:** 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
**Number of Containers per Sample:**

**Laboratory Use Only**
Cooler Present: ✓ no
Seals Intact: —
Cooler Temperature: 0.4 °C

Sampled by: Aggregate Industries QC
Comments: Please specify "Other" preservative and containers types in this space
~~Hold on analytical testing until discussion with Katherine Mason, dependent on gradation results.~~ per ML

| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
|---|---|---|---|
| 01/16/18 1:55 PM | 1-16-18 1355 | 1-16-18 1715 | 1/16/18 1725 |
| Relinquished by: (Signature, Date & Time) | Received By: (Signature, Date & Time) | Relinquished By: (Signature, Date & Time) | Received By: (Signature, Date & Time) |
| | | | |

Devon Wilson SPS

LABORATORY AGGREGATE TESTING

AGGREGATE INDUSTRIES

**SOILS**

SIEVE ANALYSIS

(ASTM C117, C136) (AASHTO T11, T27)

SOURCE: Littleton

DATE SAMPLED: 12-Jan-17

MATERIAL DESCRIPTION: CAP TYPE A 75% WSS 25% 3/8" Blend

SAMPLED BY: OM

DATE LOGGED: 12-Jan-17

TESTED BY: OM

DATE TESTED: 12-Jan-17

**C 117 T11**

| ORIGINAL DRY WEIGHT | WEIGHT AFTER WASHING | AMOUNT LOST | % LOST |
|---|---|---|---|
| 3856.2 | 3856.2 | 0.0 | 0.0 |

| SIEVE SIZE | WEIGHT RETAINED | % RETAINED | %PASSING | SPECIFICATION min | max |
|---|---|---|---|---|---|
| 3" | 0.0 | 0.0 | 100 | | |
| 2" | 0.0 | 0.0 | 100 | | |
| 1.5" | 0.0 | 0.0 | 100 | | |
| 1" | 0.0 | 0.0 | 100 | | |
| 3/4" | 0.0 | 0.0 | 100 | | |
| 1/2" | 0.0 | 0.0 | 100 | | |
| 3/8" | 61.8 | 1.6 | 98 | | |
| #4 | 926.6 | 24.0 | 76 | | |
| #8 | 1466.9 | 38.0 | 62 | | |
| #10 | 1659.1 | 43.0 | 57 | | |
| #16 | 2208.3 | 57.3 | 43 | | |
| #20 | 2531.2 | 65.6 | 34 | | |
| #30 | 2811.1 | 72.9 | 27 | | |
| #40 | 3062.6 | 79.4 | 21 | | |
| #50 | 3263.2 | 84.6 | 15 | | |
| #100 | 3577.2 | 92.8 | 7 | | |
| #200 | 3759.6 | 97.5 | 2.5 | | |

REMARKS: