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SHORT TERM RESPONSE ACTION (STRA) COMPLETION REPORT HOLDER 18/21 CAPPING PROJECT

642 Allens Avenue
Providence, Rhode Island

April 27, 2017

GZA File No.: 03.0033554.00



PREPARED FOR:

Rhode Island Department of Environmental
Management (RIDEM)
Providence, Rhode Island

ON BEHALF OF:

nationalgrid

GZA GeoEnvironmental, Inc.

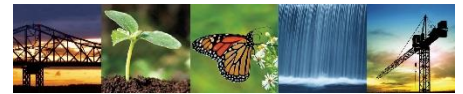
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Via E-Mail and U.S. Mail

April 27, 2017

File No. 03.0033554.00

Mr. Joseph Martella
Rhode Island Department of Environmental Management (RIDEM)
Office of Waste Management
235 Promenade Street
Providence, Rhode Island 02908

Re: Short Term Response Action (STRA) Completion Report
Holder 18/21 Capping Project
642 Allens Avenue
Providence, Rhode Island
RIDEM Case No. 98-004 / Site Remediation File No. SR-28-1152

Dear Mr. Martella:

On behalf of The Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is pleased to present to the Rhode Island Department of Environmental Management (RIDEM) the attached *Short Term Response Action (STRA) Completion Report* for the Holder 18/21 Capping Project located at 642 Allens Avenue in Providence, Rhode Island (herein referred to as the "Site"). The remedial actions described in the attached report were conducted in accordance with the *Short Term Response Action Plan (STRA) - Holder 18/21 Capping Project* dated January 25th, 2016 and *STRA Addendum – Holder 18/21 Capping Project* dated May 10th, 2016. The STRA was approved by RIDEM via issuance of a *Short Term Response Action Approval Letter* dated May 18th, 2016.

This STRA was implemented to address impacted soils located in the former Holder 18/21 portion of the Site. As described in the attached report, the STRA work was performed between August 8th, 2016 and March 31st, 2017 and included clearing and grubbing, installation of erosion and sedimentation controls, certain limited demolition activities, excavation and off-Site disposal of certain impacted materials, grading and off-Site disposal of excess materials, installation of an engineered cap, and restoration activities (hydroseeding and fencing). The installation of the engineered cap included an integral stormwater management system consisting of collection of stormwater via a forebay and trench drain system and infiltration through a vegetated sand filter.

We understand that the attached *STRA Completion Report* will be posted on the RIDEM Office of Waste Management website for the 642 Allens Avenue property. It is noted that the Project was approved on May 18th, 2016 prior to receiving the *Public Involvement Plan (PIP) Process Initiation Letter* of September 6th, 2016 and submittal of the October 2016 PIP. Because the PIP has not been formally approved by RIDEM, we have taken no further steps to follow the PIP mailing list in the distribution of this report.



Should you have any questions or comments regarding the information presented herein or in the attached, please do not hesitate to contact the undersigned or Amy Willoughby (National Grid) at (781) 907-3644.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Handwritten signature of Sophia Narkiewicz in blue ink.

Sophia Narkiewicz, P.E.
Assistant Project Manager

Handwritten signature of Stephen Raymond in blue ink.

Stephen Raymond
Associate Principal

Handwritten signature of Margaret S. Kilpatrick in blue ink.

Margaret S. Kilpatrick, P.E.
Associate Principal

Attachments: *Short Term Response Action (STRA) Completion Report – Holder 18/21 Capping Project*

cc: Amy Willoughby, National Grid



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1.0 INTRODUCTION

On behalf of The Narragansett Electric Company d/b/a National Grid (National Grid), GZA GeoEnvironmental, Inc. (GZA) is pleased to present to the Rhode Island Department of Environmental Management (RIDEM) this *Short-Term Response Action (STRA) Completion Report – Holder 18/21 Capping Project* for the former 642 Allens Avenue Manufactured Gas Plant (MGP) located in Providence, Rhode Island (herein referred to as the “Site”). **Figure 1** presents a Site Locus Plan. The remedial actions described herein were conducted in accordance with the *Short Term Response Action Plan (STRAP) - Holder 18/21 Capping Project* dated January 25th, 2016 and *STRA Addendum – Holder 18/21 Capping Project* dated May 10th, 2016 and applicable provisions of the RIDEM *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases* (Remediation Regulations, DEM-DSR-01-93, as amended November 2011). The STRA was approved by RIDEM via issuance of a *Short Term Response Action Approval Letter* dated May 18th, 2016.

This *STRA Completion Report* was prepared in general accordance with Rules 6.09 and 6.10 of the Remediation Regulations and is subject to the Limitations provided in **Appendix A** and modification if subsequent information is developed by GZA or any other party.

1.1 PROJECT OBJECTIVES

As described in the STRAP, this work was performed to address impacted soils in the former Holder 18/21 area which, as shown on **Figure 2, Overall Aerial** is located on the southwestern portion of the Site. **Figure 3, Pre-Construction Site Plan**, presents the conditions in the STRA area prior to remedial activities. These remedial actions were performed between August 8th, 2016 and March 31st, 2017 and included clearing and grubbing, installation of erosion and sedimentation controls, certain limited demolition activities, excavation and off-Site disposal of certain impacted materials, grading and off-Site disposal of excess materials, installation of an engineered cap, and restoration activities (hydroseeding and fencing). The installation of the engineered cap included an integral stormwater management system consisting of collection of stormwater via a forebay and trench drain system and infiltration through a vegetated sand filter. In addition, this project involved installation of a new electric slide gate, new light poles and of certain existing electrical infrastructure at the Site.

Photographs of the STRA activities are included in **Appendix B**.

2.0 BACKGROUND

The following sections present a summary of relevant background information for the Site, with focus on the STRA area, including relevant historical operations, regulatory history and status of the RIDEM-listed Site.

2.1 SITE DESCRIPTION

The Site is located at 642 Allens Avenue in the southeastern portion of the City of Providence, Rhode Island and is identified as Assessor’s Plat (A.P.) 56, Lots 5, 273, 316 and 317, and A.P. 101, Lot 1. The Site consists of approximately 42 acres with frontage on Allens Avenue to the west and bounded to the east by the Providence River. It is adjoined to the northwest by Motiva/Texaco, and to the south by Terminal Road, the former Sun Oil/Providence Port facility, and New England Bituminous Terminal Corporation. Current Site operations include natural gas regulation and distribution, gas construction storage, a compressed natural gas (CNG) fueling station, liquefied natural gas (LNG) storage and distribution,



and cement storage and distribution. As shown on **Figure 2, Overall Aerial**, the STRA Area consists of approximately 4.63 acres on the southwestern portion of the Site and is located on A.P. 101 Lot 1 and A.P. 56 Lot 5. This area was mostly vacant prior to the STRA implementation. The following table presents a summary of the Site current use:

A.P.	Lot	Current Owner	Address	Current Use(s)
101	1	TNEC	642 Allens Avenue 670 Allens Avenue	Natural Gas Construction Storage Natural Gas Regulation and Distribution CNG Fueling Station
56	5	TNEC	642 Allens Avenue	Natural Gas Construction Storage Natural Gas Regulation and Distribution
56	273	TNEC	139 Terminal Road	Cement Storage and Distribution
56	316	TNEC	121 Terminal Road	LNG Facility
56	317	TNEC	121 Terminal Road	Access Road

Site topography is generally level with gentle slopes towards the Providence River and is entirely enclosed and secured by chain-link fencing with barbed wire. Based on several rounds of investigations performed at the Site, subsurface conditions generally consist of urban fill underlain by organic silt, glacial outwash and glacial till. The depth to bedrock is generally more than 100 feet below ground surface (bgs). Groundwater is generally encountered within the fill unit, is classified as GB or not suitable for drinking water use without treatment, and flows towards the tidally influenced Providence River.

A United States Army rifle range operated at the Site in the late 1800s, prior to the use of the Site as a MGP. From 1910 until 1954, a MGP operated at the Site producing coal gas, carbureted water gas, and high-BTU oil gas. MGP by-products were routinely managed through recovery, storage, recycling, reprocessing, and resale. Such by-products included coke, coal tar, ammonia, toluene, and benzene. B.P. Clapp operated an ammonia works at the 642 Allens Avenue property beginning in 1910, and managed the recycling and sale of ammonia by products. The United States Government operated a toluene facility at the Site for a short period of time during 1918. By 1954, coal gasification operations at the Site had ceased. From 1952 until the 1960s, a liquefied petroleum gas distribution plant operated on the Site. Gulf Oil had a facility at the Site to store kerosene from 1957 to 1971. A LNG facility has operated on the eastern and southeastern portions of the Site since 1972. The southeastern portion of the Site has been utilized for cement storage and distribution since 1961. Propane storage and distribution occurred at the Site from the 1960s to the 1980s for peak shaving purposes.

In October 2015, National Grid relocated an approximately 2,000 cubic yard (CY) soil stockpile from the northcentral portion of the Site (the former material handling area (MHA) stockpile) to the STRA Area to pre-load the former Holder 18 area and to be subsequently utilized as fill for the purpose of achieving subgrade elevations during the capping project. The MHA stockpile was generated during remedial activities in the early 2000s. As described in the November 2002 *Remedial Action Closure Report* and the 2003 *Site Investigation Report (SIR)* prepared by Vanasse Hangen Brustlin, Inc. (VHB) on behalf of the New England Gas Company, the MHA stockpile material was designated as acceptable for future reuse as backfill at the Site below the engineered cap.

The STRA area includes the Oxide Box Area (0.80 acres), the former gasholder area (3.30 acres) and the area between the former gasholder area and the CNG fueling station area (0.5 acres). These areas are described below and are shown on **Figure 4, Exploration Location Plan**.

- The Oxide Box Area was the location of former purifier tanks associated with the historic MGP. According to historical records, four purifier tanks were constructed sometime between 1926 and 1937. The purifier tanks were used to remove hydrogen sulfide from the gas via sorption using wood chips treated with iron oxide. The tanks were constructed of iron



and were approximately 2 feet above grade. The above ground portion of the tanks were removed sometime between 1972 and 1981.

- The former gasholder area was the location of Gasholder No.18 and No.21 and associated buildings (most notably the Holder Heating Building). There were also two 4,000-gallon gasoline underground storage tanks (USTs) present proximate to the heater building. Both USTs were decommissioned and removed in 1995. RIDEM issued a Certificate of Closure for these USTs on December 11, 1995. Gasholder No. 18 was constructed in 1911 as a holder for coal gas and was a telescopic multiple lift holder, with the lower chamber containing water and the upper chambers containing coal gas held under pressure. Gasholder No.21 was constructed between 1939 and 1950 and was a multiple lift holder as well, although it was entirely above ground. Both gasholders and the associated Heater Building were decommissioned and demolished by National Grid in 2009. The below ground portion of Gasholder No. 18 was decontaminated and the area was backfilled to current grades. The concrete slab associated with Gasholder No. 21 remains in-place. This area of the Site was graded with soil and crushed stone during the decommissioning and demolition effort in 2009.
- The CNG fueling station was constructed sometime between 1988 and 1994 and is currently active. Prior to the construction of the CNG fueling station, this area of the Site was vacant. Prior to implementation of this capping, the vacant area between the former holder and the CNG Fueling Station was vegetated with grass.

Figure 4, *Exploration Location Plan*, presents the location of explorations that have been conducted in the STRA work area.

2.2 SITE REGULATORY HISTORY

RIDEM issued a *Letter of Responsibility (LOR)* dated February 13th, 1998 to Providence Gas Company for the Site due to certain soil and groundwater impacts at concentrations in excess of Method 1 standards as defined in the Remediation Regulations. The Site was listed as State Site #98-004 (RIDEM File No. SR-28-1152) following the issuance of the LOR.

Investigation activities have been conducted at the Site in several phases since 1994 and have been documented in several reports submitted to RIDEM.

Constituents detected include, total petroleum hydrocarbons (TPH), cyanide, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and certain inorganic compounds (primarily arsenic and lead). Observations of light non-aqueous phase liquids (LNAPL) have been made in certain Site monitoring wells. In addition, MGP by-product materials (purifier box waste and other residual type materials), including within the Oxide Box Area, have been observed in certain former gas processing areas.

A *Soil Management Plan (SMP)* was developed for the Site and submitted to RIDEM on August 31, 2010; a revised SMP was later submitted on September 12, 2012. The SMP was prepared to establish procedures to be followed should construction or maintenance activities require the need to manage soils and/or groundwater at the Site. The SMP includes procedures for soil screening, disposal requirements, soil stockpile management and erosion controls, dust controls, capping requirements, decontamination protocols for equipment leaving the Site, requirements for import of soils, dewatering guidelines and management of non-soil debris (such as asphalt or concrete). The SMP is similar to what would be required with an Environmental Land Usage Restriction (ELUR) and has been followed at the Site for numerous facility projects.

As discussed during a November 2013 meeting with RIDEM and subsequent project communications with the Department, GZA, on behalf of National Grid, is currently preparing a *SIR Addendum* to document results of more recent investigation efforts. The *SIR Addendum* will also present the preferred remedial approach for the Site and will consist of progressive



engineered capping consistent with facility upgrades, groundwater monitoring and institutional controls. The approach presented herein for the *STRA* Area is consistent with the overall remedy for the Site which will be described in the *SIR Addendum*.

2.3 PERMITS AND OTHER APPROVALS

The *STRA* was implemented consistent with the following approvals:

- RIDEM Office of Waste Management, *STRA* Approval, dated May 18, 2016
- RIDEM Office of Water Resources:
 - Water Quality Certification (WQC) 16-069, dated May 19, 2016
 - RIPDES General Construction Permit RIR101403, dated May 19, 2016
- Rhode Island Department of Health (RIDOH):
 - Approval – Asbestos Abatement Plan 74277, dated August 13, 2016
 - ASB-22 Start Work Notification, dated August 29, 2016
 - Confirmation of Receipt of Asbestos for Disposal, dated November 14, 2016

Copies of these permits and approvals are included in **Appendix C**.

3.0 **STRA ACTIVITIES**

3.1 HOLDER 18/21 ENGINEERED CAP CONSTRUCTION ACTIVITIES

This section presents the activities performed to implement the RIDEM-approved *STRAP*. These *STRA* activities were performed between August 8, 2016 and March 31, 2017.

3.1.1 Construction Summary

As described in more detail herein and consistent with the RIDEM-approved *STRAP*, the construction activities involved clearing and grubbing, installation of erosion and sedimentation controls, certain limited demolition activities, excavation and off-Site disposal of certain impacted materials, grading and off-Site disposal of excess materials, installation of an engineered cap, and restoration activities (hydroseeding and fencing). The installation of the engineered cap included an integral stormwater management system consisting of collection of stormwater via a forebay and trench drain system and infiltration through a vegetated sand filter. In addition, this project involved installation of a new electric slide gate, new light poles and of certain existing electrical infrastructure at the Site.

All imported soils were tested to ensure compliance with RIDEM Method 1 Residential Direct Exposure Criteria (R-DEC), in accordance with the testing frequency and analysis outlined in the RIDEM-approved *STRAP*. The following attached figures were prepared to illustrate the completed *STRA* activities:

- **Figure 5 – Remedial Cap Installed Subgrade Grading Plan;**



- **Figure 6** – Remedial Cap Installed Final Grading and Restoration Plan;
- **Figure 7** – Installed Stormwater Management Plan; and
- **Figure 8** – Installed Remedial Cap Details.

Engineered caps were designed to mitigate direct exposure to underlying impacted soils across the approximately 201,537 square feet (SF) (4.63 acre) STRA Area and limit further degradation of groundwater in certain areas with asphalt and/or geosynthetic liner caps (approximately 148,086 SF (3.4 acres)). A geosynthetic liner system was installed in the Oxide Box Area (28341 SF – 0.65 acre) as an additional measure to mitigate direct exposure and any potential future recontamination of the asphalt/soil cap via capillary action.

The following describes the engineered caps installed.

- Asphalt Engineered Cap (approximately 119,745 SF – 2.75 acres) - a minimum of 2-inches of binder course asphalt overlain with a minimum of 2-inches of top course.
- Asphalt Engineered Cap underlain with a geosynthetic liner system (approximately 21,960 SF – 0.5 acres) - a geosynthetic liner system (textured Linear Low Density Polyethylene (LLDPE) with an 8-ounce non-woven geotextile (Mirafi 180N) cushion layer above and below), overlain by a minimum of 8-inches of imported processed gravel and finished with asphalt (a minimum of 2-inches of binder course overlain with a minimum of 2-inches of top course).
- Topsoil Engineered Cap underlain with a geosynthetic liner system (approximately 6,381 SF – 0.15 acres) - a geosynthetic liner system (textured LLDPE with an 8-ounce non-woven geotextile (Mirafi 180N) cushion layer above and below), overlain by a minimum of 6-inches of imported granular fill and finished with a minimum of 6-inches of imported topsoil.
- Riprap Engineered Cap (approximately 11,296 SF – 0.26 acres) - an 8-ounce non-woven geotextile (Mirafi 180N) overlain by a minimum of 12-inches of imported Rhode Island Department of Transportation (RIDOT) R-3 Riprap.
- Topsoil Engineered Cap (approximately 20,822 SF – 0.48 acres) - an 8-ounce non-woven geotextile (Mirafi 180N) overlain by a minimum of 6-inches of imported granular fill and finished with a minimum of 6-inches of imported topsoil.
- 2-inch Crushed Stone Engineered Cap (approximately 21,333 SF – 0.49 acres) - an 8-ounce non-woven geotextile (Mirafi 180N) overlain by a minimum of 6-inches of imported granular fill and finished with a minimum of 6-inches of imported 2-inch crushed stone.

The limits of each of these engineered caps is depicted on **Figure 6** and details showing cross sections of each cap type are provided on **Figure 8**.

The STRA implementation work was surveyed by A-Plus Construction Services with details depicted on the stamped as-built figures included in **Appendix D**.

3.1.2 Project Oversight, Contractor List and Equipment Utilized

A representative of GZA was present on-Site full time during the work. GZA monitored and documented construction activities to ensure that the engineered caps and stormwater system were constructed consistent with the design plans/specifications, the RIDEM-approved STRAP, and all relevant permits and approvals. In addition, GZA performed



perimeter air monitoring during all intrusive activities. The results of the perimeter air monitoring are described in Section 3.2.2.

Charter Contracting Company (Charter) of Boston, Massachusetts was the primary construction contractor for the *STRA* remedial work. Charter's subcontractors included: RPF Environmental of Amesbury, Massachusetts (Site Safety and Health Officer); JC Electric of Providence, Rhode Island (electrical contractor); A-Plus Construction Services of Norwell, Massachusetts (land surveying); Chenango Contracting of Johnson City, New York (geosynthetic liner installation services); Citiworks of Attleboro, Massachusetts (fencing contractor) and PJ Keating of Acushnet, Massachusetts (Paving Contractor).

Construction equipment utilized during this work included excavators, loaders, backhoes, dump trucks, forklifts, vibratory plate compactors, vibratory rollers, pavers and hand equipment.

3.1.3 Import Material Characterization

Processed gravel, granular fill, topsoil, C-33 sand, riprap, ¾-inch crushed stone and 2-inch crushed stone were imported to the Site as part of the *STRA* activities.

Prior to the import of the quarry run aggregate materials (riprap, ¾-inch crushed stone and 2-inch crushed stone) to the Site, Charter obtained and provided certification from the import facility that the aggregate was from a clean source. These certifications are included in **Appendix F**. Prior to the import of the engineered soil materials (C-33 sand, processed gravel, granular fill and topsoil), Charter collected representative material samples and submitted the samples for analytical testing as described below.

The processed gravel, C-33 sand, crushed stone products and granular fill were furnished from dedicated stockpiles at PJ Keating's yard located at 875 Phoenix Ave in Cranston, Rhode Island. Riprap was furnished from dedicated stockpiles at Material Sand and Stone Corporation's yard located at 618 Greenville Road in North Smithfield, Rhode Island. Topsoil was furnished from G. Lopes located at 569 Winthrop Avenue in Taunton, Massachusetts. The following provides a summary of the material imported to the Site:

- Processed Gravel: 1736 tons (approximately 1157 CY)
- Granular Fill: 2179 tons (approximately 1,409 CY)
- Topsoil: 1288 tons (approximately 868 CY)
- ¾-inch crushed stone: 245 tons (approximately 178 CY)
- 2-inch crushed stone: 705 tons (approximately 511 CY)
- Riprap: 670 tons (approximately 329 CY)
- C-33 sand: 173 tons (approximately 107 CY)

Consistent with the *STRAP*, the frequency of sampling and testing of the processed gravel, C-33 sand, granular fill and topsoil was as follows:

- Full suite of analysis (as shown in the below table) for up to 2,000 cubic yards, with an additional full suite for each subsequent 2,000 cubic yards of material; and



- Arsenic analysis for each 500 cubic yards of material.

Analyte	EPA Test Method
Total Petroleum Hydrocarbons (TPH)	8100M
Volatile Organic Compounds (VOCs)	8260
Semi-Volatile Organic Compounds (SVOCs)	8270
Priority Pollutant Metals (PP-13)	6010 & 7471A

Charter collected and transported all import samples under chain-of-custody protocol to ESS Laboratories in Cranston, Rhode Island for analysis. No exceedances of the RIDEM Method 1 R-DEC were identified. Analytical results as well as associated chain-of-custody forms are presented in **Appendix E**. Quarry certifications are presented in **Appendix F**.

3.1.4 Site Preparation Work

Prior to the start of work, Charter obtained clearance from Dig Safe (Clearance #2016-2906300). RIDEM Office of Waste Management was also notified of the project start date on July 28th, 2016 by GZA.

3.1.4.1 Soil Erosion and Sedimentation Controls

Charter installed the following control measures to mitigate the potential migration of sediments and dusts and to control surface water flow during construction:

- Sedimentation and erosion control measures were installed around the downgradient portion of the work area. Sedimentation and erosion control measures consisted of compost wattles (Filtrexx Siltsoxx).
- An anti-tracking pad (wheel wash) was constructed at the entrance/exit to the STRA work area. The anti-tracking pad consisted of an approximate 20-foot wide by 50-foot long, 12-inch thick layer of 2-inch crushed stone built over 8-ounce non-woven geotextile fabric (Mirafi 180N).
- Silt sacks were installed in catch basins within the limits of the work area disturbance.
- Erosion control blankets were installed over hydroseeded areas until vegetation could establish. WINFAB brand jute mesh erosion control blankets were used at the Site.

Photos of these controls are included in **Appendix B**. In accordance with the RIDEM WQC/RIPDES permit, GZA inspected the sedimentation and erosion controls on a weekly basis and after major precipitation events. Repairs were made to erosion control devices when deficiencies were noted during inspections.

3.1.4.2 Clearing and Grubbing Work

Prior to any excavation activities, vegetation in the STRA work area was cleared and grubbed. Charter performed all vegetation removal activities. The majority of clearing and grubbing activities for the STRA work was conducted between August 11 and September 7, 2016. All cleared vegetation (non-grubbed material) was disposed off-Site at Aggregate Recycling Corporation in Eliot, ME. As described in the RIDEM-approved STRAP, all material grubbed (including surface organic soils) from an approximate 10 foot radius around the former Holders 18 and 21 (approximately 115 CY – 180 tons) was transported for disposal at ESMI Companies (ESMI) in Loudon, NH. Remaining grubbed material (including surface organic soils) over the work area was reused under engineered caps or transported for disposal at ESMI. Soil disposal bills of lading are included in **Appendix G**. Photographs of clearing and grubbing are provided in **Appendix B**.



3.1.4.3 Limited Demolition Work

As part of Site preparation activities, Charter also performed certain limited demolition activities in the STRA work area. These activities consisted of the demolition of chain link fencing, aboveground abandoned gas valves, piping, and vaults, railroad rails and ties, the former signaling shed, several concrete pads and foundations, polyethylene sheeting and tires on existing soil stockpiles, utility poles, wires, lights, and bases; and other ancillary structures.

The demolition of the former signaling shed and several of the abandoned gas valves required asbestos abatement activities, which were conducted in accordance with an approved RIDOH asbestos abatement work plan. All asbestos containing materials was disposed off-Site in accordance with our approved work plan. The 10-day RIDOH notification was submitted on August 29, 2016. The asbestos abatement activities were conducted on September 12, 2016. All asbestos waste was containerized, labeled, and transported off Site by Graf Brothers, Inc. for disposal at Waste Management of Maine – Crossroads Landfill in Norridgewock, Maine. Copies of the RIDOH asbestos abatement plan approval, the 10-day notification and confirmation of receipt of asbestos for disposal are included in Appendix C.

All uncoated concrete and brick from the work was transported to J.R. Vinagro (Vinagro), located in Johnston, Rhode Island for reuse/recycling. All railroad timbers and ties were transported to Northern Tree Service for recycling. All solid waste debris was transported off Site for disposal at Waste Management. All metal debris was transported off Site for recycling to Sims Metal Management in Providence, Rhode Island.

3.1.5 B-08 Soil Excavation

In accordance with the RIDEM-approved STRAP, Charter excavated a 10-foot by 10-foot area around boring B-08 to a depth of 3 feet bgs. One soil sample had been historically collected from B-08 at a depth of 1-2 feet bgs. TPH was detected in this sample in excess of the RIDEM Upper Concentration Limit (UCL) of 30,000 mg/kg at a concentration of 40,000 mg/kg and naphthalene was detected in excess of the RIDEM UCL of 10,000 mg/kg at a concentration of 15,400 mg/kg. Following the completion of excavation activities, GZA collected five (5) confirmatory soil samples (one from each sidewall and one from the base of the excavation) for TPH via EPA Method 8100M and naphthalene via EPA Method 8270C. Concentrations of TPH ranged from non-detect (ND) to 2,130 mg/kg, far below the RIDEM UCL of 30,000 mg/kg and naphthalene ranged from ND to 957 mg/kg, far below the RIDEM UCL of 10,000 mg/kg. Confirmatory sampling results are presented in **Table 1, B-08 Soil Removal Confirmatory Sampling Results**. This excavation is shown on the attached **Figure 5, Remedial Cap Installed Subgrade Grading Plan**. The excavation was backfilled with soil from the MHA reuse stockpile. Analytical results as well as associated chain-of-custody forms from this confirmatory sampling is presented in **Appendix H**. Soil removed from this excavation (approximately 11 tons) was transported for recycling at ESMI Companies in Loudon, NH. Copies of all manifest(s) and Bills of Lading (BOLs) are included in **Appendix G**.

3.1.6 Engineered Cap Subgrade Preparation

3.1.6.1 Geosynthetic Liner Subgrade Preparation (Oxide Box Area)

Prior to the installation of the geosynthetic liner system within the Oxide Box Area, the area was graded to facilitate the installation of the liner. The as-built subgrade elevations for the geosynthetic liner system are depicted on **Figure 5, Remedial Cap Installed Subgrade Grading Plan**. The subgrade grading plan was designed such that all materials remained within the Oxide Box Area. The soils below the geosynthetic liner system were compacted in place by Charter with a minimum of six passes with a vibratory drum roller and were observed by GZA to be firm and stable.



3.1.6.2 Asphalt Paved Area

Charter graded and shaped Site soils and material from the MHA reuse stockpile to prepare subgrade in the areas of the asphalt pavement cap installation. The as-built subgrade elevations for the asphalt paved areas are depicted on **Figure 5, Remedial Cap Installed Subgrade Grading Plan**. The soils below the asphalt pavement were compacted in place by Charter with a minimum of eight passes with a vibratory drum roller and were observed by GZA to be firm and stable.

3.1.6.3 Remaining Landscape Cap Areas (Topsoil, Crushed Stone and Riprap Areas)

Charter excavated and/or backfilled the stone/soil capped areas to an elevation 1-foot below the final design elevation. Spoils from the excavation were used to create the subgrade for the asphalt paved and landscaped areas. The as-built subgrade elevations for the soil and stoned areas are depicted on **Figure 5, Remedial Cap Installed Subgrade Grading Plan**. The soils below the soil/stone capped areas were compacted in place by Charter with a minimum of four passes with a vibratory plate compactor and were observed by GZA to be firm and stable.

3.1.7 Geosynthetic Liner Installation

A 40-mil LLDPE double-sided textured liner system was installed on top of subgrade soils in the Oxide Box Area to serve as an engineered barrier/cap. The geosynthetic liner system consisted of an 8-ounce non-woven geotextile (Mirafi 180N) overlain by the 40 mil LLDPE liner (Solmax) overlain by an additional layer of 8-ounce non-woven geotextile (Mirafi 180N). The 8-ounce non-woven geotextile (Mirafi 180N) was installed to cushion the LLDPE liner. The 40 mil LLDPE liner sections were welded together to create one continuous, welded liner piece. During installation, Chenango Contracting (the liner installation company) performed Quality Assurance and Quality Control (QA/QC) field testing as follows: trial weld testing for peel and shear strength (four samples) and non-destructive pressure tests on all panel seams. The results of the QA/QC testing confirmed the liner fusion equipment was functioning properly, with peel and shear values in excess of the project specifications (50 pounds (lbs))/inch (minimum) peel value and 60 lbs/inch (minimum) shear value). The liner seams were observed to be air tight with seam pressure maintained at 30 pounds per square inch (psi) for 5 minutes. An anchor trench was installed along the perimeter of the geosynthetic liner to limit movement of the liner after backfilling. The liner system was installed in accordance with the project specifications. The location of the geosynthetic liner system and anchor trench are depicted on **Figure 5, Remedial Cap Installed Subgrade Grading Plan**. Liner QA/QC testing results are attached in **Appendix I**. Photos of the geosynthetic liner system installation are included in **Appendix B**.

3.1.8 Final Engineered Cap Surface Installation

3.1.8.1 Asphalt Pavement Cap

Asphalt pavement was installed in two, 2-inch thick lifts over the previously prepared subgrade surface (as described above in Section 3.1.6.2 and shown on **Figure 8, Remedial Cap Details**). A 2-inch thick lift of RIDOT binder course mix was placed over the subgrade and then compacted with 6-8 passes of the double drum vibratory roller. A 2-inch thick lift of RIDOT Class I-1 top course mix was placed over the binder and then compacted with 6-8 passes of the double drum vibratory roller. Tack coat was placed at the junction of all new asphalt pavement surfaces to existing asphalt pavement. The total pavement cap thickness was a minimum of 4-inches thick. The as-built final elevations for the asphalt areas are depicted on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**.

3.1.8.2 Asphalt Pavement Cap (over Geosynthetic Liner)

An 8-inch thick lift of imported processed gravel was placed over the geosynthetic liner and compacted with 6-8 passes of a static drum roller. Asphalt pavement was then installed in two, 2-inch thick lifts over the processed gravel surface (as



described above in Section 3.1.6.1 and shown on **Figure 8, Remedial Cap Details**). A 2-inch thick lift of RIDOT binder course mix was placed over the subgrade and then compacted with 6-8 passes of the double drum vibratory roller. A 2-inch thick lift of RIDOT Class I-1 top course mix was placed over the binder and then compacted with 6-8 passes of the double drum vibratory roller. Tack coat was placed at the junction of all new asphalt pavement surfaces to existing asphalt pavement. The total pavement cap thickness was a minimum of 4-inches thick. The as-built final elevations for the asphalt areas are depicted on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**.

3.1.8.3 Topsoil Cap (over Geosynthetic Liner)

A 6-inch thick lift of imported granular fill was placed over the geosynthetic liner and compacted with 6-8 passes of a static drum roller. A six-inch thick lift of imported topsoil was then placed over the compacted granular fill layer (as described above in Section 3.1.6.1 and shown on **Figure 8, Remedial Cap Details**). The total topsoil cap thickness was a minimum of 12-inches thick. The as-built final elevations for the topsoil areas are depicted on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**.

3.1.8.4 Topsoil Cap

An 8-oz non-woven geotextile (Mirafi 180N) was placed over the prepared subgrade soils. A 6-inch thick lift of imported granular fill was then placed over the geotextile and compacted with 6-8 passes of a vibratory drum roller. A six-inch lift of imported topsoil was then placed over the compacted granular fill layer (as described above in Section 3.1.6.3 and shown on **Figure 8, Remedial Cap Details**). The total topsoil cap thickness was a minimum of 12-inches thick. The as-built final elevations for the topsoil areas are depicted on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**.

3.1.8.5 Riprap Cap

An 8-oz non-woven geotextile (Mirafi 180N) was placed over the prepared subgrade soils. A 12-inch thick lift of imported class R3 riprap was then placed over the geotextile (as described above in Section 3.1.6.3 and shown on **Figure 8, Remedial Cap Details**). The total riprap cap thickness was a minimum of 12-inches thick. The as-built final elevations for the riprap areas are depicted on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**.

3.1.8.6 Crushed Stone Cap

An 8-oz non-woven geotextile (Mirafi 180N) was placed over the prepared subgrade soils. A 6-inch thick lift of imported granular fill was then placed over the geotextile and compacted with 6-8 passes of a vibratory drum roller. A 6-inch thick lift of imported 2-inch crushed stone was then placed over the compacted granular fill layer (as described above in Section 3.1.6.3 and shown on **Figure 8, Remedial Cap Details**). The total topsoil cap thickness was a minimum of 12-inches thick. The as-built final elevations for the crushed stone areas are depicted on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**.

3.1.9 Stormwater System Installation

Components for the stormwater system included pre-cast concrete structures and piping, including manhole structures (DMH#1, DMH#2 and DMH#3), forebay sections and piping sections (24-inch diameter class V reinforced concrete pipe (RCP)). Additionally, 18-inch diameter SDR-35 pipe, 8-inch diameter Schedule 80 PVC and an ACO SK-300 trench drain were installed as part of the stormwater management system. The layout, dimensions, and invert elevations of the stormwater management systems were surveyed by A-Plus Construction Services and as-built details including invert elevations are depicted on **Figure 7, Installed Stormwater Management Plan**.



Charter excavated approximately 8-foot wide by 6-foot deep trenches along the concrete forebay alignment for installation of the forebay structures. Non-woven geotextile (Mirafi 180N) was placed over the excavation bottom and a six-inch lift of $\frac{3}{4}$ " crushed stone was placed. After installation of the $\frac{3}{4}$ " crushed stone, the non-woven geotextile was wrapped around the sides and top of the $\frac{3}{4}$ " crushed stone prior to placement of the forebay structures. In areas where groundwater was encountered, it was pumped into an on-Site frac tank for subsequent off Site disposal (described further below in Section 3.1.11). Charter installed the precast concrete forebay sections on top of the prepared subgrade. Forebay sections were pulled together with a series of winches until the inner joints had a gap of less than 1/2-inch and sealed with butyl rubber gaskets. All inner joints were mortared. Precast forebay sections were backfilled to subgrade elevations with Site soils.

Charter excavated approximately 4-foot wide by 4-foot deep trenches along the RCP and SDR-35 pipe alignment. In areas where groundwater was encountered, groundwater was pumped into an on-Site frac tank for containerization and subsequent off Site-site disposal (described further below in Section 3.1.11). Charter then installed pipe sections on top of the prepared subgrade which consisted of compacted in place Site soils. In areas where piping was installed under asphalt pavement, the pipe trench was backfilled to subgrade elevations with imported compacted granular fill. In other areas (not installed under asphalt piping), the pipe trench was backfilled to subgrade elevations with Site soils. Warning tape was installed along all pipe alignments.

Three five-foot diameter precast concrete drainage manholes (DMH#1, DMH#2 and DMH#3) were installed along the piping alignment. Drainage manholes were installed by excavating approximately 7-foot wide by 7-foot long by 5-foot deep excavations along the pipe alignment. Non-woven geotextile (Mirafi 180N) was placed over the excavation bottom and a six-inch lift of $\frac{3}{4}$ " crushed stone was placed. After installation of the $\frac{3}{4}$ " crushed stone, the non-woven geotextile (Mirafi 180N) was wrapped around the sides and top of the $\frac{3}{4}$ " crushed stone prior to placement of the manhole structures. In areas where groundwater was encountered, it was pumped into an on-Site frac tank for subsequent off Site disposal (described further below in Section 3.1.11). Precast concrete manholes were then installed on top of the prepared subgrade. All inner joints were sealed with butyl rubber gaskets and mortared. The excavation for DMH#2 and DMH#3 was backfilled to subgrade elevations with imported compacted granular fill and the excavation for DMH#1 was backfilled to subgrade elevations with Site soils.

The sand filter was constructed by excavating soils in the filter area from elevation 12 feet NAVD88 to 7.5 feet NAVD88 or the approximate top of the observed water table in the area. Precast concrete forebays were utilized to create a retaining wall around the entire filter perimeter. The top of the precast concrete forebays surrounding the sand filter were extended 18-inches above the surrounding grade to prevent stormwater runoff from directly entering the sand filter via sheet flow. The filter was constructed with a 2.5-foot thick layer of loosely placed C-33 sand directly above existing subgrade and a top layer consisting of 6-inches of topsoil. The topsoil was seeded to prevent erosion and increase treatment efficiencies. A 2-foot by 2-foot riprap splash pad was installed beneath the 6-inch orifice from the forebays discharging into the sand filter.

Charter excavated an approximately 2-foot deep by 90-foot long trench for installation of the trench drain. Charter installed the pre-formed ACO SK300 drains within the trench. Drain sections were hung on rebar posts within the trench to allow subsequent placement of concrete around the drain sections. The pre-formed invert channels along the length of the installation provide the system with a 1-percent slope. The drain sections were set with 9/16-inch spacing between the outer rim edge to create a radius around the holder pad. Once set within the trench with the proper radius, Charter poured a 12-inch thick 4,000 psi concrete slab on the bottom and sides of the trench drain up to finished grade.

Charter excavated an approximate 3-foot wide by 3-foot deep trenches along the Schedule 80 PVC pipe alignment from the trench drain to the forebay system (approximately 20 linear feet (LF)). A six-inch lift of C-33 sand was placed in the



bottom of the trench. Charter then installed pipe sections and installed at least 6-inches of C-33 sand around and on top of the installed piping. The pipe trench was then backfilled to subgrade elevations with Site soils. Warning tape was installed along the pipe alignment.

Photos of the stormwater system installation are included in **Appendix B**.

3.1.10 Site Restoration Activities

New fencing, gates, electrical utilities and landscaping are illustrated on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**. Photos of the site restoration are included in **Appendix B**.

3.1.10.1 Electrical Work

A series of 8-inch diameter concrete filled, steel bollards with 208 volt power outlets attached for vehicle charging were installed in the northwest portion the *STRA* area. An underground electrical service was installed along the bollard alignment. This underground electrical service was also utilized to power the slide installed (as described below in Section 3.1.10.2).

In addition, eight, 40-foot wooden light poles with new light fixtures were installed along the southern border of the Site. Overhead electric service was provided from an existing underground electric service from Compressor House No. 2. Overhead electrical was also utilized to re-power the existing water meter hot box.

3.1.10.2 Fencing and Gates

New 6-foot high, chain-link fencing was installed in portions of the *STRA* work area to connect to the existing fencing present on Site. As shown on **Figure 6, Remedial Cap Installed Final Grading and Restoration Plan**, fencing was either finished with barbed wire or razor wire. A new slide gate was installed proximate to the Booster House. A new swing gate was installed proximate to Compressor House No. 2.

3.1.10.3 Landscaping

Hydroseeding and installation of final erosion controls was performed on October 19, 2016. Final erosion controls consisted of the installation of erosion control netting and additional sections of Filtrexx Siltsoxx.

3.1.11 Dewatering and Construction Water Disposal

As noted above, dewatering was required several times during the *STRA* implementation work (primarily to install the stormwater management system). All construction water was containerized for off-Site disposal within on-Site frac tanks. No construction water or dewatering fluids were infiltrated at the Site. Approximately 14,316 gallons of construction water was disposed off-Site at Clean Harbors Environmental Services, Inc. in South Portland, ME. Approximately 1 ton of soil was generated during the decontamination of the frac tank. This material was disposed off-Site at Clean Harbors Environmental Services, Inc. in Braintree, MA. Copies of all manifest(s) and BOLs documenting the off-Site disposal of these materials is included in **Appendix J**.

3.1.12 Excess Soil Disposal

All excess soil generated during the *STRA* implementation that could not be reused below final engineered caps was transported off-Site at ESMI in Loudon, New Hampshire for thermal desorption treatment/recycling.



Prior to off-Site transport, a total of five (5) representative samples were collected from the stockpiled soil and analyzed for total metals via EPA Methods 6010C, 6020A and 7471B, VOCs via EPA Method 8260B, organochloride pesticides via EPA Method 8081B, poly-chlorinated biphenyls (PCBs) via EPA Method 8082A, TPH via EPA Method 8100M, chlorinated herbicides via EPA Method 8151A, semi-volatile organic compounds (SVOCs) via EPA Method 8270D, conductivity via EPA Method 9050A, pH via EPA Method 9045, flashpoint via EPA Method 1010, reactive cyanide via EPA Method 7.3.3.2, reactive sulfide via EPA Method 7.3.4.1, toxicity characteristic leaching procedure (TCLP) lead via EPA Methods 1311 and 6010C, TCLP VOCs via EPA Methods 1311 and 8260B, total cyanide via EPA Method 9014 and total sulfur via EPA Method D4239 based on the frequency and testing parameters required by ESMI.

Approximately 801.85 tons total of excess soil was transported off-Site to ESMI (included grubbing volume referenced above in Section 3.1.4.2 and the B-08 soil removal volume referenced above in Section 3.1.5). Copies of laboratory reports, all manifest(s) and BOLs documenting the off-Site disposal of these soils is included in Appendix G.

3.1.13 Monitoring Well Installation

In accordance with the RIDEM-approved *STRAP*, National Grid plans to replace monitoring wells VHB-10, VHB-18 and GZ-320D. After on-going and future facility projects are completed at the Site (currently anticipated in 2019, however, the construction window may extend further than the anticipated schedule), these monitoring wells (along with others at the Site) will be replaced/installed and a proposed post-development groundwater monitoring program will be implemented. As the proposed post-development well installation and groundwater monitoring work is expected to be at least approximately three (3) years away, it is anticipated that GZA, on behalf of National Grid, will submit a *Site Investigation Work Plan (SIWP)* with final proposed locations to RIDEM for review and approval prior to performing this work. The *SIWP* will also include a summary of the proposed groundwater monitoring program, including sampling frequency and parameters.

3.2 HEALTH AND SAFETY AND ENVIRONMENTAL MONITORING

3.2.1 Health and Safety

Prior to initiating *STRA* activities, GZA and Charter prepared written Site-specific health and safety plans, which were adhered to during the work. A daily health and safety briefing was held on-Site during which individuals working on-Site were briefed on potential health and safety related issues prior to starting daily activities. The remedial activities described herein were completed without any reported worker health and safety issues.

3.2.2 Field Air Monitoring Instrument Results

In accordance with the RIDEM-approved *STRAP*, real time air monitoring was performed during all *STRA* activities involving the use of the following hand held instrumentation:

- Portable Photoionization Detector (PID) MiniRAE – this instrument measured total volatile organic compounds (TVOC) with a detection limit of 0.1 parts per million (ppm) or 100 parts per billion (ppb). TVOC readings were measured at the perimeter of the *STRA* work area approximately every two hours during each day or more frequently depending on field conditions (at least four times a day).
- DustTRAK Dust Meter – this dust meter used infrared electromagnetic radiation to sense airborne particles less than 10 microns in size. The detection limit for this instrument was 1 microgram per cubic meter ($\mu\text{g}/\text{m}^3$). Similar to the PID, the readings from this hand held instrument were measured at the perimeter of the *STRA* work area approximately every two hours during each day or more frequently depending on field conditions (at least four times a day).



The following table presents the real-time monitoring threshold levels for the perimeter of the STRA work area.

Real-Time Perimeter STRA Work Area Action Levels	
Compound	Perimeter of STRA Work Area
Total Volatile Organic Compounds (TVOC)	1.0 ppm
Respirable Particulate Dust (PM ₁₀)	1,000 µg/m ³

The PID and DustTRAK Dust Meter were calibrated at the beginning of each day. Regular monitoring was conducted at the perimeter of the STRA work area. A summary table presenting the results of the real time TVOCs and dust monitoring are included in **Appendix K**. As presented in the Appendix, results of the real-time monitoring were below the Action Levels for the constituents monitored.

3.3 DEVIATIONS FROM THE RIDEM-APPROVED STRA

After collective review with NBC and National Grid, the system's emergency overflow was modified in the field to direct stormwater runoff in excess of the water quality volume, via sheet flow to adjacent catch basin structures owned and maintained by National Grid or remain temporarily ponded on-Site. In addition, certain of the proposed 24-inch diameter RCP pipe sections connecting the forebay system were changed to 18-inch diameter SDR piping in order to resolve utility conflicts that were discovered during construction.



4.0 CERTIFICATION

To address Section 6.10 of the Remediation Regulations, the following certifications of completeness are provided:

GZA certifies that the information provided in this Short Term Response Action Completion Report is complete and accurate to the best of GZA's knowledge.

A handwritten signature in blue ink, appearing to read "M. Kilpatrick", written over a horizontal line.

Margaret S. Kilpatrick, P.E.
Associate Principal
GZA GeoEnvironmental, Inc.

Amy Willoughby, representative of the Narragansett Electric Company d/b/a National Grid, certifies to the best of his knowledge that this Short Term Response Action Completion Report is a complete and accurate representation of the circumstances known about the release and the subsequent response activities.

A handwritten signature in black ink, appearing to read "Amy Willoughby", written over a horizontal line.

Amy Willoughby
Lead Environmental Scientist
National Grid



FIGURES

NATIONAL GRID

HOLDER 18/21 CAPPING PROJECT AS-BUILT PLAN SET

642 ALLENS AVENUE, PROVIDENCE, RHODE ISLAND

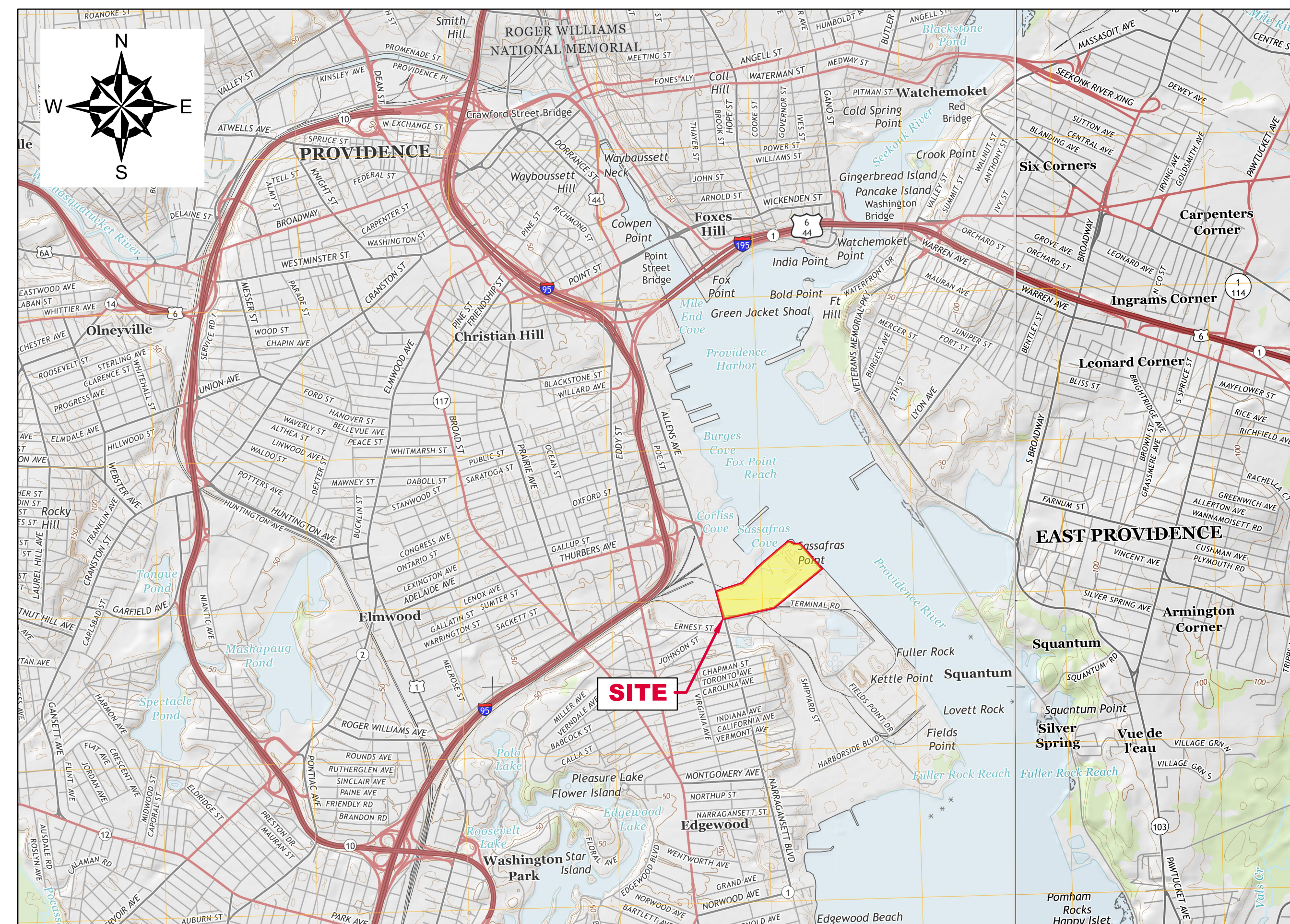
APRIL 2017

PREPARED FOR:

nationalgrid

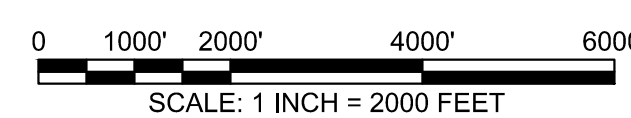
PREPARED BY:

GZA GEOENVIRONMENTAL, INC.
530 BROADWAY
PROVIDENCE, RHODE ISLAND 02909



PROJECT LOCUS MAP

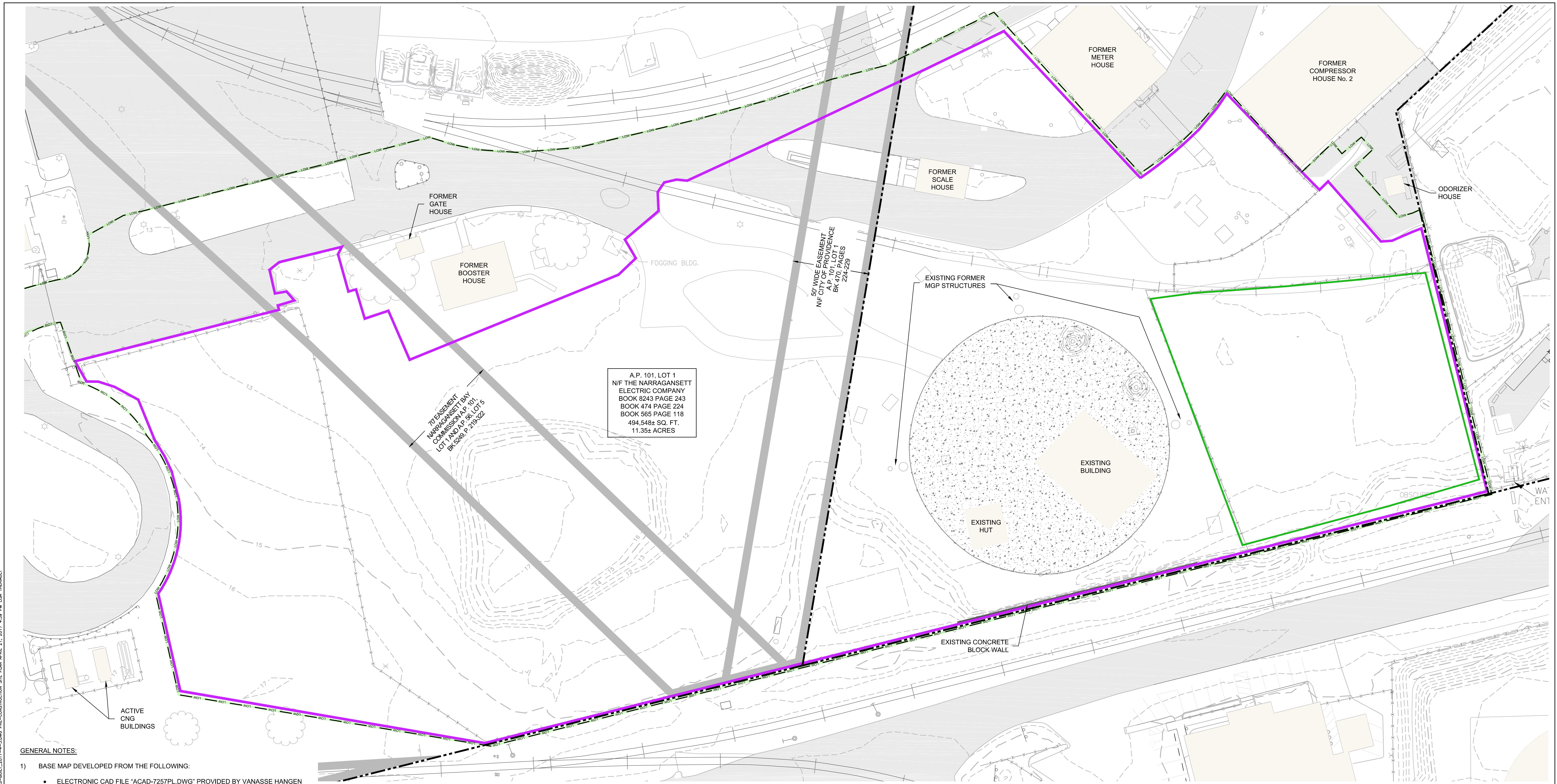
SOURCE: USGSSTORE.GOV



INDEX OF DRAWINGS	
SHEET #	SHEET TITLE
C1	COVER
2	OVERALL AERIAL
3	PRE-CONSTRUCTION SITE PLAN
4	EXISTING EXPLORATION LOCATION PLAN
5	REMEDIAL CAP INSTALLED SUBGRADE GRADING PLAN
6	REMEDIAL CAP INSTALLED FINAL GRADING AND RESTORATION PLAN
7	INSTALLED STORMWATER MANAGEMENT PLAN
8	INSTALLED REMEDIAL CAP DETAILS

THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

2017 - GZA GeoEnvironmental, Inc. G2A-VA-EVA-13554-AS-BUILT-2017-4-3-DWG PRE-CONSTRUCTION SITE PLAN APRIL 21, 2017 4:39 PM LISA THERIAULT



A.P. 101, LOT 1
N/F THE NARRAGANSETT
ELECTRIC COMPANY
BOOK 3243 PAGE 243
BOOK 474 PAGE 224
BOOK 565 PAGE 118
494,548± SQ. FT.
11.35± ACRES

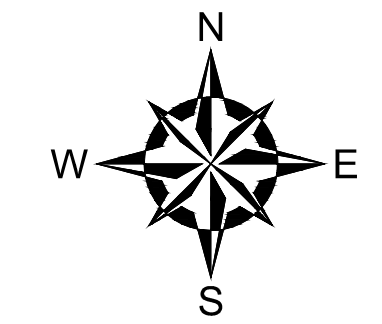
TO EASEMENT
NARRAGANSETT EBY,
LOT 1 AND P. 8 & LOT 5
BK 474 P. 224-225

50' WIDE EASEMENT
N/F CITY OF PROVIDENCE
BK 470 PAGES
224-225

GENERAL NOTES:

- 1) BASE MAP DEVELOPED FROM THE FOLLOWING:
 - ELECTRONIC CAD FILE "ACAD-7257L.DWG" PROVIDED BY VANASSE HANGEN BRUSTLIN (VHB) ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3 AND AERIAL MAPPING BY WSP TRANSPORTATION AND INFRASTRUCTURE DATED JANUARY 15, 2014 PREPARED FOR NATIONAL GRID LAND SURVEYING DEPARTMENT, WALTHAM, MASSACHUSETTS AND CAD FILE NO. 09303023.052-1.DWG. PLANS PROVIDED BY NATIONAL GRID.
 - DESCRIPTIONS PROVIDED IN THE CITY OF PROVIDENCE DEED BOOK (BK) 470 PAGES 224 - 229, BK 561 PAGES 326 - 328, BK 1111 PAGES 752-756 AND BK 5249 PAGES 219 - 322.
 - ELECTRONIC CAD FILE 14-152_SU1_REV2.DWG, TITLED "TOPOGRAPHIC SURVEY PLAN, PORTION OF A.P. 56 LOT 5" DATED OCTOBER 27, 2014 AND PROVIDED BY NATIONAL GRID.
- 2) HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY VHB.
- 3) VERTICAL DATUM IS BASED ON NAVD 1988 FROM BASE MAPPING PROVIDED BY VHB.
- 4) ON-SITE INVESTIGATIONS AND SURVEYS BY GZA PERSONNEL DURING VARIOUS SITE VISITS BETWEEN 2011 AND 2016.
- 5) PARCEL DATA PROVIDED BY THE CITY OF PROVIDENCE PLANNING AND DEVELOPMENT DEPARTMENT. PARCELS OF REAL ESTATE ASSESSED AS OF DECEMBER 31, 2012. GIS DATA ARE FOR PLANNING PURPOSES ONLY, THESE DATA DO NOT REPRESENT A LEGALLY RECORDED PLAN, DEED, SURVEY OR ENGINEERING SCHEMATIC AND ARE NOT INTENDED TO BE USED AS SUCH.
- 6) SITE BOUNDARIES ARE APPROXIMATE.

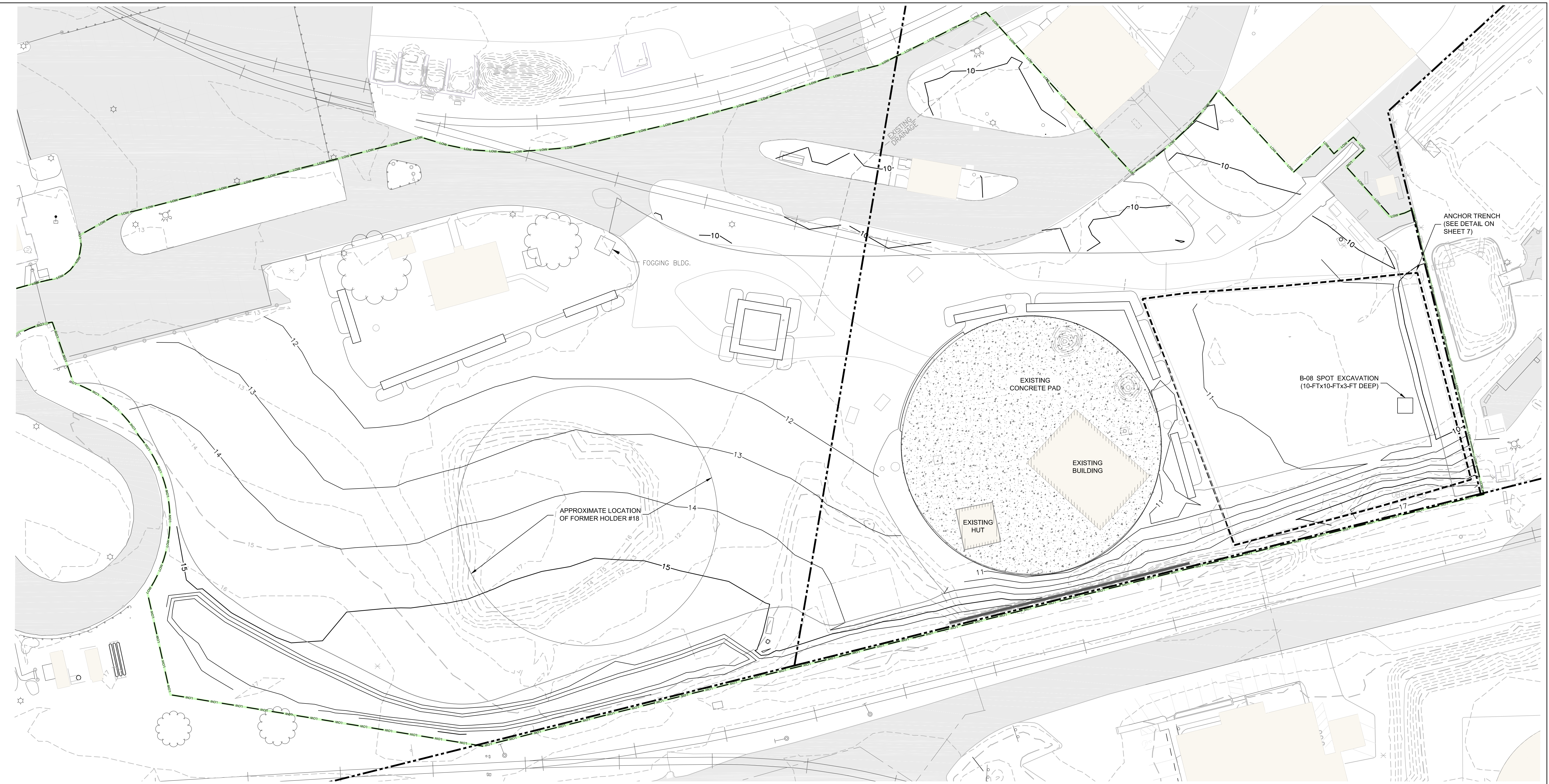
LEGEND:	
	PRE-CONSTRUCTION CONTOUR (MAJOR 5 FOOT INTERVAL)
	PRE-CONSTRUCTION CONTOUR (MINOR 1 FOOT INTERVAL)
	SITE PROPERTY LINES
	PRE-CONSTRUCTION PAVEMENT
	EASEMENT AREA
	LIMIT OF WORK
	STRA AREA
	OXIDE BOX AREA
	PRE-CONSTRUCTION RAILROAD TRACKS
	PRE-CONSTRUCTION FENCE
	BUILDING
	MANHOLE
	UTILITY POLE
	LIGHT POLE
	HYDRANT
	CONCRETE PAD



THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

NATIONAL GRID HOLDER 18/21 CAPPING PROJECT AS-BUILT PLAN SET 642 ALLENS AVENUE, PROVIDENCE, RHODE ISLAND			
PRE-CONSTRUCTION SITE PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: nationalgrid	DRAWING 3	
PROJ MGR: MSK DESIGNED BY: SDN DATE: APRIL, 2017	REVIEWED BY: TRG DRAWN BY: LDT PROJECT NO.: 33554.00	CHECKED BY: SDN SCALE: AS NOTED REVISION NO.: 0	SHEET NO. 3 OF 8

2017 - GZA GeoEnvironmental, Inc. G2A-A\EMV\33554\AS-BUILT\33554_00_CAPPING GRADIES_AS-BUILT_2017-4-3.DWG REMEDIAL CAP INSTALLED SUBGRADE GRADING AS-BUILT_2017-4-3.DWG REHAULT APRIL 21, 2017 4:37 PM LISA THERIAULT

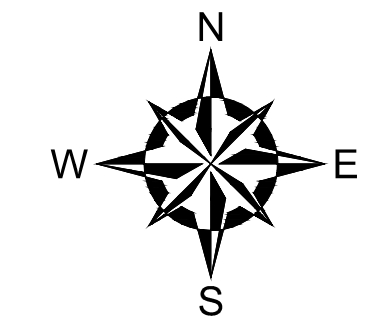


GENERAL NOTES:

1. BASE MAP DEVELOPED FROM THE ELECTRONIC CAD FILE ACAD-7257PL.DWG PROVIDED BY VANASSE HANGEN BRUSTLIN (VHB) ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3 AND AERIAL MAPPING BY WSP TRANSPORTATION AND INFRASTRUCTURE DATED JANUARY 15, 2014 PREPARED FOR NATIONAL GRID LAND SURVEYING DEPARTMENT, WALTHAM, MASSACHUSETTS AND CAD FILE NO. 09303023.052-1.DWG. PLANS PROVIDED BY NATIONAL GRID.
2. AS-BUILT DEVELOPED FROM THE ELECTRONIC CAD FILE 3654 642 ALLENS AVE ASBUILT. PREPARED BY A-PLUS CONSTRUCTION SERVICES CORPORATION FOR CHARTER ENVIRONMENTAL, PROJECT TITLE "AS-BUILT PLAN," SHEET 1 TITLED "SUB GRADE" AND SHEET 2 TITLED "FINISH GRADE," DATED DECEMBER 16, 2016 AND PROVIDED TO GZA ON MARCH 23, 2017.
3. HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY VHB.
4. VERTICAL DATUM IS BASED ON NAVD 1988 FROM BASE MAPPING PROVIDED BY VHB.

LEGEND:

- 15 AS-BUILT SUBGRADE CONTOUR (MAJOR 5 FOOT INTERVAL)
- 14 AS-BUILT SUBGRADE CONTOUR (MINOR 1 FOOT INTERVAL)
- 10 PRE-CONSTRUCTION CONTOUR (MAJOR 5 FOOT INTERVAL)
- 11 PRE-CONSTRUCTION CONTOUR (MINOR 1 FOOT INTERVAL)
- PROPERTY LINES
- LIMIT OF WORK
- BUILDING
- PRE-CONSTRUCTION CONCRETE SURFACE



THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

NATIONAL GRID HOLDER 18/21 CAPPING PROJECT AS-BUILT PLAN SET 642 ALLENS AVENUE, PROVIDENCE, RHODE ISLAND			
REMEDIAL CAP INSTALLED SUBGRADE GRADING PLAN			
PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: 		
PROJ MGR: MSK DESIGNED BY: SDN DATE: APRIL, 2017	REVIEWED BY: TRG DRAWN BY: LDT PROJECT NO.: 33554.00	CHECKED BY: SDN SCALE: AS NOTED REVISION NO.: 0	DRAWING 5 SHEET NO. 5 OF 8



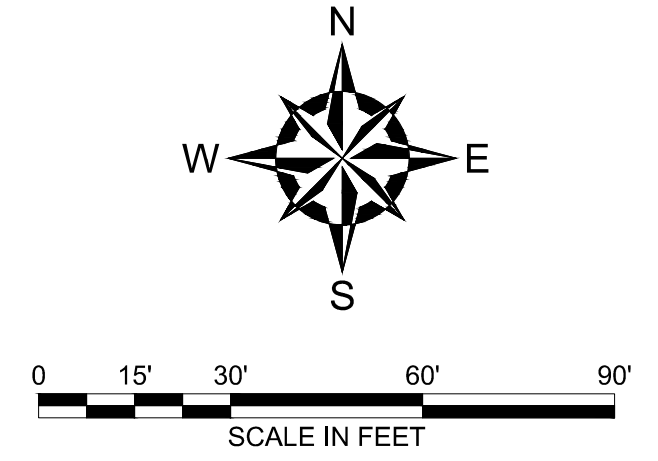
GENERAL NOTES:

1. BASE MAP DEVELOPED FROM THE ELECTRONIC CAD FILE ACAD-7257PL.DWG PROVIDED BY VANASSE HANGEN BRUSTLIN (VHB) ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50'. DRAWING NO. SV-1 THROUGH SV-3 AND AERIAL MAPPING BY WSP TRANSPORTATION AND INFRASTRUCTURE DATED JANUARY 15, 2014 PREPARED FOR NATIONAL GRID LAND SURVEYING DEPARTMENT, WALTHAM, MASSACHUSETTS AND CAD FILE NO. 09303023.052-1.DWG. PLANS PROVIDED BY NATIONAL GRID.
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3. HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY VHB.
4. VERTICAL DATUM IS BASED ON NAVD 1988 FROM BASE MAPPING PROVIDED BY VHB.
5. SELECT PRESENTED SITE UTILITIES WERE TAKEN FROM HISTORIC FIGURES PROVIDED BY NATIONAL GRID. ALL UTILITY LOCATIONS ARE APPROXIMATE AND HAVE BEEN ALIGNED AND ADJUSTED FOR THE "BEST FIT" AND THESE DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED. UTILITIES ARE SHOWN FOR REFERENCE ONLY. OTHER LOCATIONS MAY EXIST. CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES WITH THE LOW.

- LEGEND:**
- 15 AS-BUILT FINAL CONTOUR (MAJOR 5 FOOT INTERVAL)
 - 14 AS-BUILT FINAL CONTOUR (MINOR 1 FOOT INTERVAL)
 - 10 PRE-CONSTRUCTION CONTOUR (MAJOR 5 FOOT INTERVAL)
 - 11 PRE-CONSTRUCTION CONTOUR (MINOR 1 FOOT INTERVAL)
 - PROPERTY LINES
 - INSTALLED UNDERGROUND ELECTRIC
 - OHW INSTALLED OVERHEAD WIRE
 - INSTALLED HIGHWAY BARRIER WALL
 - LIMIT OF WORK
 - x INSTALLED FENCE

- INSTALLED ACCESS COVER
- ☐ INSTALLED WATER QUALITY HOOD
- ⊕ INSTALLED MANHOLE
- INSTALLED CONCRETE MAFIA BLOCK
- INSTALLED PIPE
- ▨ INSTALLED TRENCH DRAIN
- PRE-CONSTRUCTION BUILDING
- ▭ INSTALLED SEDIMENT FOREBAY
- INSTALLED BOLLARD

- 2" TOP COURSE ASPHALT, 2" BINDER COURSE ASPHALT
- 2" TOP COURSE ASPHALT, 2" BINDER COURSE ASPHALT, 8" PROCESSED GRAVEL, GEOSYNTHETIC LINER SYSTEM
- 12" RIP RAP (RIDOT R-3), 8-OUNCE NON-WOVEN GEOTEXTILE
- 6" CRUSHED STONE (2"), 6" COMPACTED GRANULAR FILL, 8-OUNCE NON-WOVEN GEOTEXTILE
- 6" TOPSOIL, 6" COMPACTED GRANULAR FILL, 8-OUNCE NON-WOVEN GEOTEXTILE
- 6" TOPSOIL, 6" COMPACTED GRANULAR FILL, GEOSYNTHETIC LINER SYSTEM
- PRE-CONSTRUCTION PAVEMENT
- PRE-CONSTRUCTION CONCRETE SURFACE
- VEGETATED SAND FILTER



NO.	ISSUE/DESCRIPTION	BY	DATE

THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY NATIONAL GRID OR THE NATIONAL GRID'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND NATIONAL GRID. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND NATIONAL GRID, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND NATIONAL GRID.

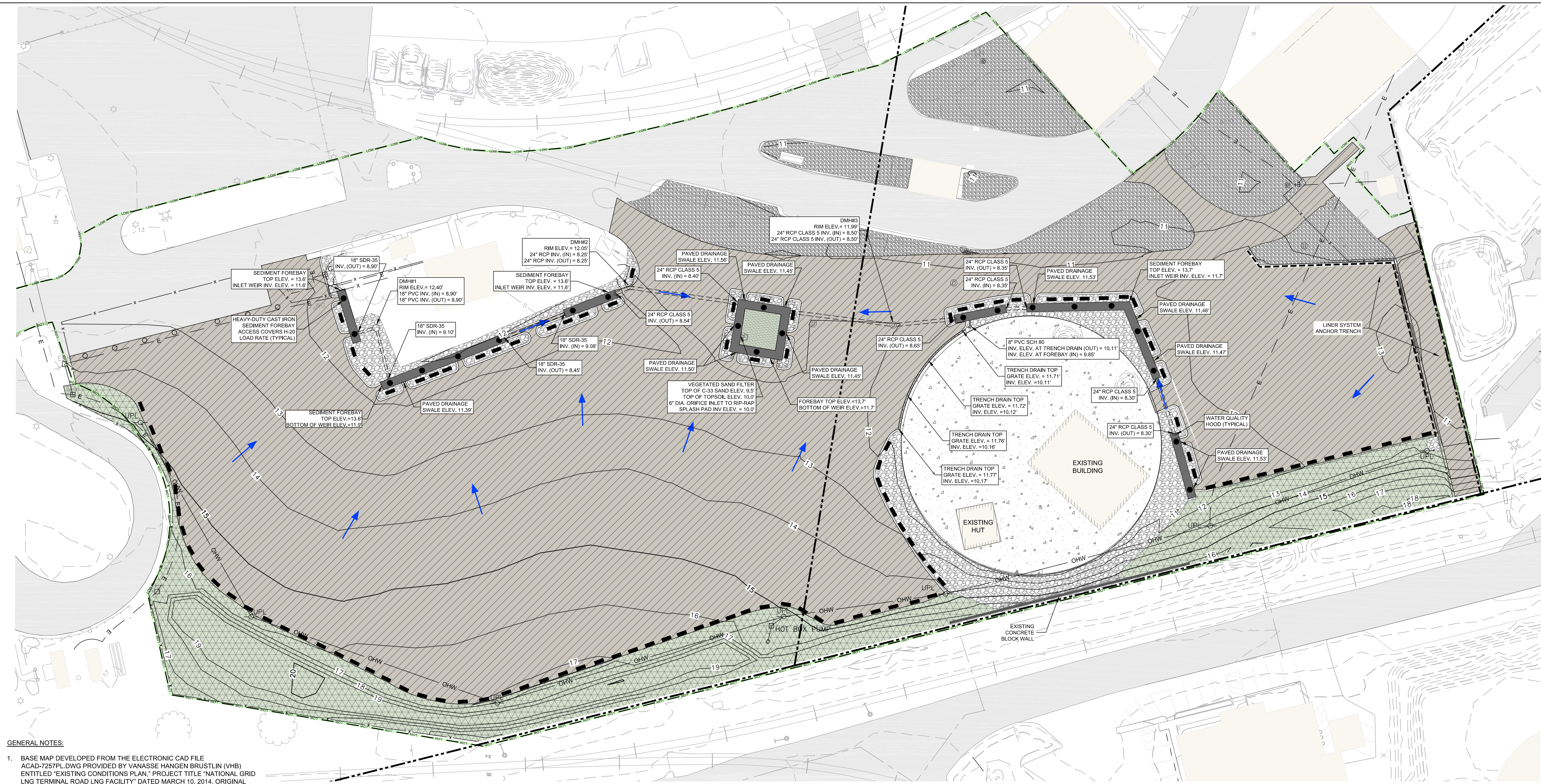
NATIONAL GRID
 HOLDER 18/21 CAPPING PROJECT AS-BUILT PLAN SET
 642 ALLENS AVENUE, PROVIDENCE, RHODE ISLAND

REMEDIAL CAP INSTALLED FINAL GRADING AND RESTORATION PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: nationalgrid
PROJ MGR: MSK DESIGNED BY: SDN DATE: APRIL, 2017	CHECKED BY: TRG DRAWN BY: LDT PROJECT NO.: 33554.00
CHECKED BY: SDN SCALE: AS NOTED REVISION NO.: 0	DRAWING 6 SHEET NO. 6 OF 8

2017 - GZA GeoEnvironmental, Inc. G2A-ALEVA-13354-AR-13-000-00-CAPPING GRADIES-AS-BUILT-2017-4-13.DWG REMEDIAL CAP INSTALLED FINAL GRADING AND RESTORATION PLAN APRIL 21, 2017 4:43 PM USA THERIAULT

2017 - GZA GeoEnvironmental, Inc. G2A-VA-ENV-13354-AR-V-FIGURES-000-DWG-13354-00-CAPPING GRADIES-AS-BUILT-2017-4-3-DWG INSTALLED STORMWATER MANAGEMENT PLAN APRIL 21, 2017 4:45 PM USA THERIAULT

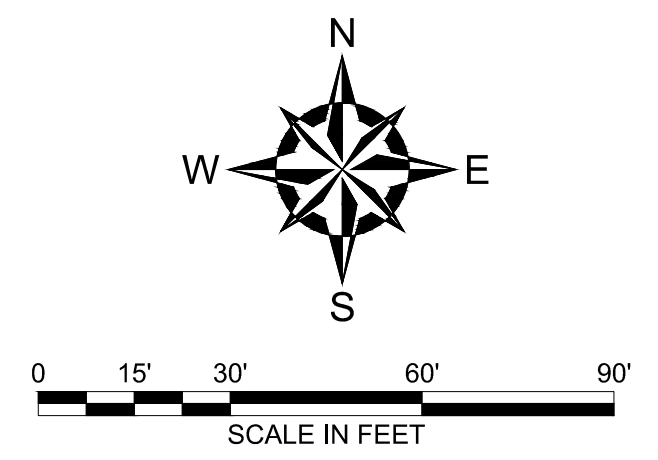


- GENERAL NOTES:**
- BASE MAP DEVELOPED FROM THE ELECTRONIC CAD FILE ACAD-7257PL.DWG PROVIDED BY VANASSE HANGEN BRUSTLIN (VHB) ENTITLED "EXISTING CONDITIONS PLAN," PROJECT TITLE "NATIONAL GRID LNG TERMINAL ROAD LNG FACILITY" DATED MARCH 10, 2014, ORIGINAL SCALE 1" = 50', DRAWING NO. SV-1 THROUGH SV-3 AND AERIAL MAPPING BY WSP TRANSPORTATION AND INFRASTRUCTURE DATED JANUARY 15, 2014 PREPARED FOR NATIONAL GRID LAND SURVEYING DEPARTMENT, WALTHAM, MASSACHUSETTS AND CAD FILE NO. 09303023.052-1.DWG. PLANS PROVIDED BY NATIONAL GRID.
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 - HORIZONTAL DATUM IS BASED ON NAD 1983 FROM BASE MAPPING PROVIDED BY VHB.
 - VERTICAL DATUM IS BASED ON NAVD 1988 FROM BASE MAPPING PROVIDED BY VHB.
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 - ON-SITE INVESTIGATIONS AND SURVEYS WERE PERFORMED BY GZA PERSONNEL DURING VARIOUS SITE VISITS BETWEEN 2011 AND 2016.
 - PIPE INVERT ELEVATIONS ARE APPROXIMATE DUE TO THE PRESENCE OF WATER QUALITY HOODS.

- LEGEND:**
- 15 AS-BUILT FINAL CONTOUR (MAJOR 5 FOOT INTERVAL)
 - 14 AS-BUILT FINAL CONTOUR (MINOR 1 FOOT INTERVAL)
 - 10 PRE-CONSTRUCTION CONTOUR (MAJOR 5 FOOT INTERVAL)
 - 11 PRE-CONSTRUCTION CONTOUR (MINOR 1 FOOT INTERVAL)
 - PROPERTY LINES
 - E INSTALLED UNDERGROUND ELECTRIC
 - OHW INSTALLED OVERHEAD WIRE
 - INSTALLED HIGHWAY BARRIER WALL
 - LIMIT OF WORK
 - x INSTALLED FENCE

- LEGEND:**
- INSTALLED ACCESS COVER
 - ☐ INSTALLED WATER QUALITY HOOD
 - ⊙ INSTALLED MANHOLE
 - ▬ INSTALLED CONCRETE MAFIA BLOCK
 - INSTALLED PIPE
 - ▨ INSTALLED TRENCH DRAIN
 - PRE-CONSTRUCTION BUILDING
 - ▬ INSTALLED SEDIMENT FOREBAY
 - INSTALLED BOLLARD

- FINAL SURFACE FINISH:**
- LIMIT OF HYDROSEEDING
 - ▨ LIMIT OF INSTALLED EROSION CONTROL NETTING
 - ▨ RIP RAP (RIDOT R-3) INSTALLED
 - ▨ 2" CRUSHED STONE INSTALLED
 - ▨ ASPHALT PAVING INSTALLED
 - ▨ PRE-CONSTRUCTION CONCRETE SURFACE
 - ▨ VEGETATED SAND FILTER



NO.	ISSUE/DESCRIPTION	BY	DATE

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NATIONAL GRID
HOLDER 18/21 CAPPING PROJECT AS-BUILT PLAN SET
642 ALLENS AVENUE, PROVIDENCE, RHODE ISLAND

INSTALLED STORMWATER MANAGEMENT PLAN

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com	PREPARED FOR: nationalgrid
PROJ MGR: MSK DESIGNED BY: SDN DATE: APRIL, 2017	CHECKED BY: SDN SCALE: AS NOTED REVISION NO.: 0
DRAWING 7 SHEET NO. 7 OF 8	



TABLE

Table 1
B-08 Soil Removal Confirmatory Sampling Results
 Holder 18/21 Capping Project
 Providence, Rhode Island

File No. 03.00033554.00
 4/20/2017

	RIDEM Industrial Commercial Direct Exposure Criteria (I/C DEC)	RIDEM GB Leachability Criteria	RIDEM Upper Concentration Limit (UCL)	Sample Name: Lab Number: Date Collected: Sample Type: Units	CS-01-09142016 1609272-01 9/14/2016 Sidewall	CS-02-09142016 1609272-02 9/14/2016 Sidewall	CS-03-09142016 1609272-03 9/14/2016 Sidewall	CS-04-09142016 1609272-04 9/14/2016 Sidewall	CS-05-09142016 1609272-05 9/14/2016 Bottom
EPA Method 8270D Semi-Volatile Organic Compounds (SVOCs)									
Naphthalene	10,000	NE	10,000	mg/kg	<0.367	3.16	957	20.1	2.15
EPA Method 8100M Total Petroleum Hydrocarbons (TPH)									
TPH	2,500	2,500	30,000	mg/kg	73	986	2130	2090	<40.6

Notes

Data is compared to RIDEM Method 1 Standards. Shaded results represent exceedances of standards.

Table only shows confirmatory samples collected as part of the B-08 soil removal work

ND - Not Detected

NA - Not Analyzed



APPENDIX A
LIMITATIONS

LIMITATIONS

1. This Short Term Response Action (STRA) Completion Report has been prepared on behalf of and for the exclusive use of The Narragansett Electric Company d/b/a National Grid (National Grid), solely for use in documenting the work completed as described herein at the 642 Allens Avenue Former MGP ("Site") under the applicable provisions of the State of Rhode Island Department of Environmental Management Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of GZA GeoEnvironmental, Inc.(GZA) or National Grid.
2. GZA's work was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and GZA observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. GZA's findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the study. No other warranty, express or implied is made. Specifically, GZA does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by GZA during the work described herein.
3. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based upon services performed and observations made by GZA.
4. In the event that National Grid or others authorized to use this report obtain information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to GZA's attention forthwith. GZA will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.
5. The conclusions and recommendations contained in this report are based in part upon the data obtained from environmental samples obtained from relatively widely spread subsurface explorations. The nature and extent of variations between these explorations may not become evident until further exploration. If variations or other latent conditions then appear evident, it will be necessary to reevaluate the conclusions and recommendations of this report.
6. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more gradual. For specific information, refer to the boring logs.
7. In the event this work included the collection of water level data, these readings have been made in the test pits, borings and/or observation wells at times and under conditions stated on the exploration logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may

occur due to variations in rainfall and other factors different from those prevailing at the time measurements were made.

8. The conclusions contained in this report are based in part upon various types of chemical data and are contingent upon their validity. These data have been reviewed and interpretations made in the report. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by GZA and the conclusions and recommendations presented herein modified accordingly.

J:\ENV\33554.abu\Work\MHA Reuse for Gas Holder Grading\Construction\Completion Reports\STRAP closure\Appendix A - Limitations\33554Limitations-Appendix A.docx



APPENDIX B
CONSTRUCTION PHOTOGRAPHS



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 1	Date: 8/5/16		
Direction Photo Taken: Looking south			
Description: Mobilization			

Photo No. 2	Date: 8/8/16		
Direction Photo Taken: Looking south			
Description: Grubbing			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 3	Date: 8/8/16		
Direction Photo Taken: Looking east			
Description Temporary fence installation			

Photo No. 4	Date: 8/11/16		
Direction Photo Taken: Looking east			
Description: 1-foot deep excavation of impacted soils near scale house for cap installation			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 5	Date: 8/12/16		
Direction Photo Taken: Looking west			
Description: Grubbing			

Photo No. 6	Date: 8/12/16		
Direction Photo Taken: Looking west			
Description: Straw wattles installed			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 7	Date: 8/15/16		
Direction Photo Taken: Looking north			
Description: Construction entrance			

Photo No. 8	Date: 8/16/16		
Direction Photo Taken: Looking west			
Description: Regrading of on-site soils			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 9	Date: 8/17/16		
Direction Photo Taken: Looking west			
Description: 1-foot deep removal of impacted soils near meter house			

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 10	Date: 8/18/16		
Direction Photo Taken: Looking east			
Description: Concrete pad removal			



Appendix B - Photographic Log

Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
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Photo No. 11	Date: 8/22/16	
Direction Photo Taken: Looking south		
Description: Grading of southern berm		

Photo No. 12	Date: 8/23/16	
Direction Photo Taken: Looking south		
Description: Spreading of MHA stockpile soils		



Appendix B - Photographic Log

Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
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Photo No. 13	Date: 8/23/16	
Direction Photo Taken: Looking west		
Description: Grading of southern berm		

Photo No. 14	Date: 8/24/16	
Direction Photo Taken: Looking northwest		
Description: Preparation of subgrade for paved area		



Appendix B - Photographic Log

Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
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Photo No. 15	Date: 8/25/16	
Direction Photo Taken: Looking west		
Description: Dust control		

Photo No. 16	Date: 8/30/16	
Direction Photo Taken: Looking west		
Description: Grading of southern berm		



Appendix B - Photographic Log

Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
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Photo No. 17	Date: 8/31/16	
Direction Photo Taken: Looking east		
Description: Tree and brush removal		

Photo No. 18	Date: 9/2/16	
Direction Photo Taken: Looking east		
Description: Rail tie removal		



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 19	Date: 9/6/16		
Direction Photo Taken: Looking east			
Description: Geotextile and granular fill cap installation over excavated area near meter house			

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 20	Date: 9/7/16		
Direction Photo Taken: Looking east			
Description: 6-inch lift of granular fill placed and compacted in stone capped area near meter house			



Appendix B - Photographic Log



Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
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Photo No. 21	Date: 9/8/16	
Direction Photo Taken: Looking east		
Description: 6-inch lift of 2-inch stone placed over granular fill near meter house		

Photo No. 22	Date: 9/9/16	
Direction Photo Taken: Looking northwest		
Description: 6-inch lift of 2-inch stone placed over granular fill near scale house		



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 23	Date: 9/12/16		
Direction Photo Taken: Looking south			
Description: Asbestos abatement			
Photo No. 24	Date: 9/13/16		
Direction Photo Taken: Looking north			
Description: 1-foot deep removal of impacted soils near compressor house			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 25	Date: 9/13/16		
Direction Photo Taken: Looking south			
Description: Geotextile installation over excavated area near compressor house			

Photo No. 26	Date: 9/14/16		
Direction Photo Taken: Looking east			
Description: B-08 hotspot removal excavation			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 27	Date: 9/15/16		
Direction Photo Taken: Looking south			
Description: Geotextile and granular fill cap installation over southern berm			
Photo No. 28	Date: 9/16/16		
Direction Photo Taken: Looking east			
Description: Anchor trench excavation for LLDPE liner			





Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 29	Date: 9/19/16		
Direction Photo Taken: Looking east			
Description: Subgrade preparation for LLDPE liner			
Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 30	Date: 9/20/16		
Direction Photo Taken: Looking northwest			
Description: 1-foot deep excavation of impacted soils near scale house for cap installation			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 31	Date: 9/21/16		
Direction Photo Taken: Looking south			
Description: 8-oz geotextile installation under LLDPE liner in the oxide box area			
Photo No. 32	Date: 9/21/16		
Direction Photo Taken: Looking south			
Description: LLDPE liner installation over oxide box area			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 33	Date: 9/22/16		
Direction Photo Taken: Looking south			
Description: Geotextile installation over excavated area near Holder 21 pad			

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 34	Date: 9/23/16		
Direction Photo Taken: Looking east			
Description: 12-inch thick rip-rap cap placed over geotextile around holder 21 pad			



Appendix B - Photographic Log

Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
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Photo No. 35	Date: 9/23/16
Direction Photo Taken: Looking north	
Description: Liner anchor trench backfill	



Photo No. 36	Date: 9/26/16
Direction Photo Taken: Looking east	
Description 8-inch thick gravel layer placed over LLDPE liner	





Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 37	Date: 9/27/16		
Direction Photo Taken: Looking east			
Description: 12-inch thick rip-rap cap placed over geotextile around holder 21 pad			
Photo No. 38	Date: 9/28/16		
Direction Photo Taken: Looking east			
Description: 2-inch stone cap installation near scale house			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 39	Date: 9/29/16		
Direction Photo Taken: Looking east			
Description: Excavation for fence posts			
Photo No. 40	Date: 9/30/16		
Direction Photo Taken: Looking west			
Description: Topsoil placed over gravel lift in oxide box area			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 41	Date: 10/1/16		
Direction Photo Taken: Looking west			
Description: Topsoil placed over granular full lift at the southern berm			
Photo No. 42	Date: 10/3/16		
Direction Photo Taken: Looking north			
Description: Electrical service to bollards			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 43	Date: 10/3/16		
Direction Photo Taken: Looking west			
Description: Preparation of subgrade for asphalt paving			

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 44	Date: 10/4/16		
Direction Photo Taken: Looking southwest			
Description: Geotextile installation over excavated area near compressor house			



Appendix B - Photographic Log

Client Name: National Grid	Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
-----------------------------------	---	--------------------------------------

Photo No. 45	Date: 10/5/16	
Direction Photo Taken: Looking south		
Description: Preparation of subgrade for asphalt pavement in oxide box area		

Photo No. 46	Date: 10/7/16	
Direction Photo Taken: Looking west		
Description: Placement of 2-inch binder course pavement		



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 47	Date: 10/11/16		
Direction Photo Taken: Looking south			
Description: Placement of 2-inch binder course pavement			
Photo No. 48	Date: 10/13/16		
Direction Photo Taken: Looking west			
Description: Grading of topsoil cap near oxide box area			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 49	Date: 10/13/16		
Direction Photo Taken: Looking north			
Description: Concrete forebay installation			

Photo No. 50	Date: 10/18/16	
Direction Photo Taken: Looking west		
Description: Hydroseeding		



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 51	Date: 10/18/16		
Direction Photo Taken: Looking north			
Description: Concrete forebay subgrade preparation			

Photo No. 52	Date: 10/19/16		
Direction Photo Taken: Looking south			
Description: 24-inch RCP installation			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 53	Date: 10/20/16		
Direction Photo Taken: Looking southeast			
Description: 24-inch RCP backfill			

Photo No. 54	Date: 10/21/16		
Direction Photo Taken: Looking south			
Description: Straw mat installation			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 55	Date: 10/25/16		
Direction Photo Taken: Looking northwest			
Description: Light pole installation			

Photo No. 56	Date: 10/26/16		
Direction Photo Taken: Looking south			
Description: Concrete forebay and manhole #1 installation			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 57	Date: 10/27/16		
Direction Photo Taken: Looking north			
Description: 18-inch SDR 35 pipe installation and partial backfill			

Photo No. 58	Date: 10/29/16		
Direction Photo Taken: Looking southwest			
Description: Concrete forebay installation			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 59	Date: 11/2/16		
Direction Photo Taken: Looking northeast			
Description: Forebay backfill and 2-inch stone cap			

Photo No. 60	Date: 11/2/16		
Direction Photo Taken: Looking north			
Description: 18-inch SDR 35 pipe sealed into concrete forebay			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 61	Date: 11/4/16		
Direction Photo Taken: Looking south			
Description: Sand filter excavation			

Photo No. 62	Date: 11/5/16		
Direction Photo Taken: Looking south			
Description: Trench drain installation			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 63	Date: 11/5/16		
Direction Photo Taken: Looking southwest			
Description: Precast concrete forebay/sand filter installation			

Photo No. 64	Date: 11/7/16		
Direction Photo Taken: Looking northwest			
Description: Concrete pour around trench drain			



Appendix B - Photographic Log

Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 65	Date: 11/8/16		
Direction Photo Taken: Looking south			
Description: DMH-2 installation			

Photo No. 66	Date: 11/10/16		
Direction Photo Taken: Looking west			
Description: 2-inch binder course pavement installation			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 67	Date: 11/14/16		
Direction Photo Taken: Looking west			
Description: 2-inch surface course pavement installation			

Photo No. 68	Date: 11/16/16		
Direction Photo Taken: Looking southwest			
Description: C-33 sand placed in sand filter			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 69	Date: 11/17/16		
Direction Photo Taken: Looking west			
Description Rip-rap cap installed near concrete forebay			

Photo No. 70	Date: 11/18/16		
Direction Photo Taken: Looking south			
Description: Electrical connection made to hot box			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 71	Date: 11/18/16		
Direction Photo Taken: Looking south			
Description: Concrete barrier blocks placed			

Photo No. 72	Date: 11/18/16		
Direction Photo Taken: Looking west			
Description: Topsoil placed in sand filter			



Appendix B - Photographic Log


Client Name: National Grid		Site Location: STRA Completion Report – Holder 18/21 Capping – 642 Allens Ave, Providence, RI	Project No. 03.00033554.00
Photo No. 73	Date: 11/22/16		
Direction Photo Taken: Looking east			
Description: Razor wire fence installed			

Photo No. 74	Date: 11/23/16		
Direction Photo Taken: Looking north			
Description: Sliding gate installed			



APPENDIX C

PERMITS AND OTHER APPROVALS



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

SHORT-TERM RESPONSE ACTION APPROVAL LETTER

May 18, 2016

File No. SR -28-1152

Formerly Case No. 98-004

Amy A. Willoughby
Lead Environmental Scientist
New England Site Investigation & Remediation Group
National Grid
40 Sylvan Road, E3.691
Waltham, MA 02451

RE: Providence Gas Co. – AA
A.k.a. Former New England Gas Company MGP property
642 Allens Avenue, Providence, Rhode Island
Plat Map 56 / Lot 5, Plat Map 101 / Lot 1

Dear Ms. Willoughby:

On November 9, 2011, the Rhode Island Department of Environmental Management's (the Department) Office of Waste Management (OWM) amended the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations). The purpose of these regulations is to create an integrated program requiring reporting, investigation and remediation of contaminated sites in order to eliminate and/or control threats to human health and the environment in a timely and cost-effective manner. A Short-Term Response Action Approval Letter is a document used by the Department to approve limited remedial actions pursuant to Section 6.00 of the Remediation Regulations at contaminated sites that do not involve the use of complex engineered systems or techniques (i.e., groundwater pump and treat systems, soil vapor extraction systems, etc.).

In the matter of the above-referenced property (the Site), the OWM is in receipt of the following final documentation submitted pursuant to the Remediation Regulations in response to the reported release at the Site:

1. Short Term Response Action Plan (STRAP), Holder 18/21 Capping Project, 642 Allens Avenue, Providence, Rhode Island, received by the Department on April 28, 2016, and prepared by GZA GeoEnvironmental, Inc. (GZA); and
2. Short Term Response Action Plan (STRAP) - Addendum, Holder 18/21 Capping Project, 642 Allens Avenue, Providence, Rhode Island, received by the Department on May 11, 2016, and prepared by GZA.

Together these documents fulfill the requirements of Section 6.00 (Emergency or Short-term Response) of the Remediation Regulations.

The Short Term Response Action Plan (STRAP) requires encapsulation of all regulated site soils in the Holder 18/21 Area through the installation of Department approved engineered controls. STRAP activities include installing erosion and sedimentation controls, clearing and grubbing, miscellaneous demolition activities, inspection of an existing drainage line and removal of accumulated sediment and debris from the line, grading and off-Site disposal of excess materials at an appropriately licensed facility, installation of a variety of Department approved engineered caps, and restoration activities (hydroseeding and fencing). The installation of the engineered caps includes the on-Site infiltration of treated stormwater via a forebay and vegetated sand filter. Soil within the proposed unlined sand filter will be excavated to the depth of the water table and backfilled with clean imported free draining soil. Seven (7) groundwater monitoring wells in the Holder 18/21 Area shall be decommissioned and three (3) groundwater monitoring wells (VHB-10, VHB-18 and GZ-320D) shall be replaced when capping activities are completed. In the event that significant dewatered groundwater is collected prior to and/or during construction activities associated with the Department approved STRAP activities, the collected groundwater shall be containerized in one or more fractionation tanks located on site and batch treated (i.e. per each fractionation tank volume or approximately 20,000 gallons of water) via bag filtration for solids removal, followed by activated carbon treatment to remove organics. Once processed through the treatment system, the treated groundwater will be reintroduced to the ground surface into a constructed dewatering basin located upgradient of the work area and allowed to infiltrate. Samples of the groundwater treatment system effluent shall be collected on the first day of operation of the treatment system, and once per each fractionation tank volume or approximately each 20,000 gallons of water. Each sample shall be analyzed for the suite of constituents listed in the above referenced document to demonstrate compliance with the Department approved treated groundwater discharge objectives. The treated groundwater shall be compliant with the requirements of the Department's Remediation Regulations, and the Rhode Island Rules and Regulations for Ground Water Quality standards for Class GAA/GA groundwater. The treated groundwater shall not be allowed to discharge in an erosive manner or be allowed to run overland into the street or stormwater catch basins. The groundwater treatment and discharge of the treated groundwater shall have direct oversight by National Grid, or their designated representative, at all times.

At this time, the OWM offers its concurrence with the proposed remedial action for the property. The OWM approves the STRA Work Plan provided that all activities and procedures detailed in the STRA Work Plan are strictly adhered to.

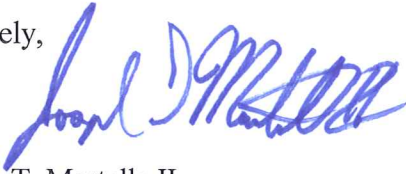
The Performing Party shall notify all abutting property owners, tenants, easement holders, the municipality, and any community well suppliers associated with any well head protection areas which encircle the site, that the Short-Term Remedial Action is complete and make available to them the findings of the Short-Term Response Report submitted in accordance with Rule 6.06 II of the Remediation Regulations. Please submit a draft notification to the Department via E-mail for review and approval prior to distribution.

Within thirty (30) days of completion of all the abovementioned remedial work outlined in the STRA Work Plan, please submit a STRA Closure Report in accordance with Rule 6.09 inclusive of any disposal documentation and laboratory sampling analysis to the OWM for review and approval.

This Short Term Response Action Approval Letter does not remove your obligation to obtain any other necessary permits from other local, State, or Federal agencies. The OWM shall require at least forty-eight (48) hours notice in advance of any remedial work.

If you have any questions regarding this letter or would like the opportunity to meet with Department personnel, please contact me by telephone at (401) 222-2797, ext. 7109, or by E-mail at joseph.martella@dem.ri.gov.

Sincerely,



Joseph T. Martella II
Senior Engineer
Office of Waste Management

Authorized by,



Kelly J. Owens
Supervising Engineer
Office of Waste Management

cc: Ronald Gagnon, RIDEM/OCTA
Neal Personeus, RIDEM/OWR
Margaret Kilpatrick, GZA
David Reis, RI CRMC
John Zuba, NBC



**RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

May 19, 2016

Ms. Amy Willoughby
The Narragansett Electric Company
280 Melrose Street
Providence, RI 02907

RE: **Holder 18/21 Capping
WQC No. 16-069 and RIPDES RIR101403**

Dear Ms. Willoughby:

The RIDEM Office of Water Resources as reviewed the application's site plans, reports, the Stormwater Operations and Maintenance plan dated April 29, 2016 and associated materials received May 3, 2016, for the project "Holder 18/21 Capping project" located on Assessors Plats 56/101, Lots 2,273,316 and 317 in Providence.

The discharge is to the Providence River, Class SB1{a}.

It has been determined that the above project is in compliance with the requirements of the, the RI Stormwater Design Installation Standards Manual, the RI Water Quality Regulations, the RIDEM Groundwater Discharge (GWD)/Underground Injection Control (UIC) Program and the Rhode Island Pollutant Discharge Elimination System (Program) provided that the applicant complies with the above referenced application material and the following conditions.

- 1) You must notify the RIDEM contact person identified below of the anticipated date of construction and your contractor's contact information, prior to any site disturbance.
- 2) Prior to construction, you shall erect or post a sign resistant to the weather and at least twelve (12) inches wide and eighteen (18) inches long, which boldly identifies the initials "DEM" and the application number(s) assigned to this permit. The sign must be maintained at the site in a conspicuous location until such time that the project is complete.
- 3) A copy of this permit, any inspection records, and (if the site disturbs greater than one acre) a signed and updated SESC Plan, must be kept at the site at all times during site preparation, construction, and final stabilization. Copies of this permit must be made available for review by any DEM or City/Town representative upon request.
- 4) All fill material, unless otherwise specified in the plans and report or approved by Waste Management, shall be clean and free of matter that could cause pollution of the waters of the State.
- 5) The stormwater collection and treatment system approved herein shall not be used to dispose of any other wastewater.
- 6) Any alterations, additions or modifications to the stormwater system from that approved herein, including permanent closure must be reviewed and approved by RIDEM prior to being effected.

s. Amy Willoughby
WQC No. 16-069 and RIPDES RIR101403
May 19, 2016

- 7) Within 30 days after completion, a Notice of Completion of Construction and Installation (or Notice of Termination for the CGP) confirming that construction and installation has been completed in accordance with the approved plans shall be submitted to the DEM Office of Water Resources. If modifications were made in the field that have more than a minimal impact on the functions of the stormwater system, as-built drawings must be provided with the Notice of Completion/Termination.
- 8) The property owner is responsible to periodically inspect, clean, and maintain the stormwater collection and disposal system for the life of the system to ensure proper performance of all components as specified by the applicant in the above referenced Stormwater Operation and Maintenance Plan.

Please be aware that the RIDEM's Rules and Regulations Governing the Establishment of Various Fees require that RIPDES CGP permit holders to pay an Annual Fee of \$100.00. An invoice will be sent to the owner on record in May/June of each year if the construction was still active as of December 31st of the previous year. The owner will be responsible for the Annual Fee until the construction activity has been completed, the site has been properly stabilized, and a completed Notice of Termination (NOT) has been received by the RIPDES Program. A copy of the NOT can be found attached to the CGP on the web page referenced above.

This proposed project is subject to tolling pursuant to RI General Laws 42-17.1-2.5. The permits issued under State Law (WQC 16-069) shall expire on July 1, 2020.

Tolling is not applicable to the Federally Authorized "Stormwater Discharge Associated with Construction Activity" CGP 2013 permit. Your authorization to discharge expires at midnight, on September 25, 2018. If construction has not been completed by that date, there will be measures in place for you to reauthorize. Please be mindful prior to this date to follow all instructions provided by this Department regarding reauthorization.

In addition to any necessary enforcement actions stemming from the violation of any of the terms or conditions of this permit, issuance of this permit does not bar the Department, or any of its various Divisions, from instituting any investigation and/or enforcement actions that it may deem necessary for violations of any and all applicable statutes, regulations and/or permits, including but not limited to violations of the terms or conditions of any previous permit issued to you as an applicant or for this site.

This permit does not relieve your obligation to obtain any other applicable local, state, and federal permits prior to commencing construction. This permit has the full force and effect of a permit issued by the Director. If you have any questions regarding the contents of the permit, you may contact Neal Personeus at (401) 222-4700, extension 7610.

Sincerely,



Alisa Richardson, MS PE
Supervising Sanitary Engineer
Construction Stormwater Engineering, Floodplain and 401 Permitting
Office of Water Resources

cc: Todd Greene, GZA

Attachment #1

RIPDES Construction General Permit Compliance Assistance

RIPDES Construction General Permit Compliance Assistance

In order to help clarify the 2013 Construction General Permit requirements noted above, RIDEM has developed a compliance assistance tool entitled "The Construction Site Stormwater Compliance Assistance Program." Participation in this voluntary program will specifically identify for you and your site operator what RIDEM and the applicable regulations require you to do as you undertake your construction project.

Although participation in this compliance assistance initiative is voluntary, RIDEM **strongly encourages** your active participation. It is important to recognize that you as the construction site owner and your designated site operator **must** comply with the applicable requirements covered in the certification workbook, regardless of whether or not you choose to participate in this program. One of the main benefits of this program is that it enhances your ability to comply with environmental regulations and helps you to prepare for a random regulatory inspection. We encourage you to take advantage of this opportunity to manage your project correctly and establish your expectations with your selected site operator early on in the project.

Please note that active sites that choose not to participate may be selected for a targeted regulatory inspection by the Department. Sites found to be in non-compliance with the regulations noted on the checklist and in the workbook may be subject to significant penalties.

More information on this program can be found by going to the following webpage:
<http://www.dem.ri.gov/programs/benviron/assist/ms4/index.htm>

This website will provide you with a Fact Sheet, which further explains the benefits of participation, and the "Construction Site Stormwater Compliance Workbook," which will assist you in participating in the voluntary self-certification process.



Department of Health
Three Capitol Hill
Room 206
Providence, RI 02908-5097

401-222-5960
RI Relay 711
www.health.ri.gov

August 13, 2016

Amy Willoughby
40 Sylvan Rd
Waltham, MA 02481

Plan Number: 74277

Dear Amy Willoughby :

This is in reference to the asbestos abatement plan which you submitted for: The Narragansett Electric Company - Holder 21 former signaling shed 642 Allens Ave Providence, RI 02905. The above referenced asbestos abatement plan is hereby approved as conforming to Part C of the Rhode Island Rules and Regulations for Asbestos Control.

It is our understanding that this office, prior to any asbestos abatement projects being conducted, will receive pre-abatement air samples.

Please note that a licensed asbestos abatement contractor shall submit an ASB-22 start work notification at least 10 working days before any on-site work begins a planned asbestos project. In addition, a licensed site supervisor shall notify this office by telephone when the licensed asbestos contractor begins site preparation.

A "Confirmation of Receipt of Asbestos for Disposal" must be forwarded to this office within five (5) working days of receipt.

If you have any further questions concerning the above referenced asbestos abatement plan, please contact David Spink at 222-7756.

Sincerely,

A handwritten signature in black ink, appearing to read "David Spink", written over a horizontal line.

David Spink
Asbestos Control Program Manager
Rhode Island Department of Health
401-222-7756

Cc: Roger Francoeur
[6LpreaASB22]



ASBESTOS START WORK NOTIFICATION

This form must be submitted 10 working days before on-site work begins. Submit to the Rhode Island Department of Health in person, by fax (401-222-2456), or through email to doh.asbestos@health.ri.gov

Asbestos Abatement Plan # 74277

Type of Notification (check one) Original Revised Cancelled

Owner Information

Facility Owner The Narragansett Electric Company

Street Address 40 Sylvan Road

City, State, Zip Code Waltham, MA 02481 Phone 401-258-5410

Contact Name Amy Willoughby Phone 401-258-5410

Asbestos Contractor Information

Contractor Name Charter Contracting Company LLC

Street Address 500 harrison Ave Suite 4R City, State, Zip Code Boston, MA 02118

Phone 857-246-6800 RI License # LAC - 308

Type of Operation (check one) Demo Ordered Demo Renovation Emergency Renovation

Facility Description

Building Name Holder 21 and Former Signaling Shed/National Grid Main Terminal Property

Street Address 642 Allens Ave. City, State, Zip Code Providence, RI 02905

Site Location Holder 21 and Former Signaling Shed/National Grid Main Terminal Property

Building Size (square feet) 16 Number of Floors 1 Age in Years Unknown

Present Use None Prior Use Signaling Shed, Pipe Gaskets

Asbestos Detection Procedure / Analytic Method (check all that apply)

PCM PLM TEM Other NIOSH Method 7400

Asbestos Quantity

Non-Friable Asbestos Materials to be Removed

	RACM to be Removed	Category I	Category II
Pipes (linear feet)		Gaskets-9 EA-+/-18LF	+/- 50 - Caulking
Surface Area (square feet)			
Facility Components (cubic feet)			

Asbestos Removal Schedule Start Date 9/12/16 End Date 9/23/16

Non-Asbestos Renovation / Demolition

Not Applicable (skip to next section) Start Date _____ End Date _____

Description of Planned Demolition / Renovation Work and Methods

ACM Caulking will be wetted, removed using hand tools, double bagged in ACM labeled waste bags and disposed of. gaskets will be handled in a similar manner.

Description of Work Practices / Engineering Controls to Prevent Emissions of Asbestos at the Demolition / Renovation Site

An independent firm(RPF) will be monitoring the demolition, collecting air samples and verifying that Charter complies with all regulations

Waste Transporter #1

Name Waste to be shipped in roll-off container; Transporter to be determined

Street Address _____ City, State, Zip Code _____

Contact Name _____ Phone _____

Waste Transporter #2

Name _____

Street Address _____ City, State, Zip Code _____

Contact Name _____ Phone _____

Waste Disposal Site

Name Turnkey Landfill

Street Address 90 Rochester Neck Road

City, State, Zip Code Rochester, NH 03839 Phone 800-963-4776

Government Agency Information

In accordance with the Rhode Island Rules and Regulations for Asbestos Control [R23-24.5-ASB] Paragraph A.4.2 (c)

Asbestos Abatement / Demo Ordered by Government Agency Not Applicable (skip to next section)

Agency Name _____

Person Issuing Order _____ Title _____

Date Order Issued _____ Final Compliance Date Required by Order _____

Emergency Renovations

In accordance with R23-24.5-ASB Section A.4.2 Not Applicable (skip to next section)

Sudden, unexpected event took place on: Date _____ Time _____

Event Description _____

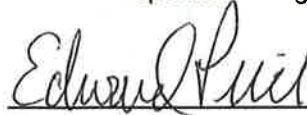
Explanation of how event caused unsafe conditions or would cause equipment damage or unreasonable financial burden _____

Unexpected Asbestos Procedures Description of procedures to be followed in the event that unexpected asbestos is found or previously non-friable asbestos material becomes crumbled, pulverized, or reduced to powder _____

Certifications

As building owner/representative, I certify that an individual trained in the provisions of this regulation [Code of Federal Regulations, 40 CFR Part 61, Subpart M] will be on site during the demolition or renovation and evidence the required training has been accomplished will be available for inspection during normal business hours. I further certify that the above information is correct.

Edward Price
Print Name


Signature

LAC-308
RI License #

8/29/16
Date

WASTE SHIPMENT RECORD

023526

GENERATOR	1. Work site (Generator): The Narragansett Electric Co. Name: 642 Allens Avenue Mailing Address: Providence, RI City/State/Zip:		Owner's Name: The Narragansett Electric Co. 40 Sylvan Road Waltham, MA 02451		Owner's telephone no.: 781-907-3647 Attn: Susan Brochu								
	2. Remover's name and address: Charter Contracting Co., LLC 500 Harrison Ave, Suite 4R Boston, MA 02118					Remover's telephone no.: 857-246-6800							
	3. Waste Disposal site (WDS): Waste Management of ME - Crossroads Landfill Name: Ellen Bellic Mailing Address: 357 Mercer Road City/State/Zip: Norridgewock, ME 04957			WDS telephone no.: 207-634-2714		Additional Information: PROFILE No. 494952NH Profile No. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>							
Physical Site Location: Norridgewock, ME													
4. Name and address of responsible agency: U.S. Environmental Protection Agency 5 Post Office Square, Suite 1000 Boston, MA 02109													
5. Description of materials: Gasket/Metal Pipe Non-Friable Asbestos RQ, NA2212, ASBESTOS,9, PGIII RQ = 1 LB (ONE POUND)			6. Containers: No. Type 1 30cy RO		7. Total quantity: m ³ (yd ³) 3 tons								
8. Special handling instructions and additional information (provided by generator.): EMERGENCY RESPONSE NUMBER: 401-258-5410													
9. 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. NOTE: Generator must retain a copy of this form.													
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;"> Printed/typed name & title: Amy A. Wilson Lead Environmental Scientist </td> <td style="width: 15%;"> Signature: <i>[Signature]</i> </td> <td style="width: 10%;"> Month: 11 </td> <td style="width: 10%;"> Day: 14 </td> <td style="width: 5%;"> Year: 2016 </td> </tr> </table>							Printed/typed name & title: Amy A. Wilson Lead Environmental Scientist	Signature: <i>[Signature]</i>	Month: 11	Day: 14	Year: 2016		
Printed/typed name & title: Amy A. Wilson Lead Environmental Scientist	Signature: <i>[Signature]</i>	Month: 11	Day: 14	Year: 2016									
10. Transporter 1 (Acknowledgement of receipt of materials)													
Printed/typed name & title: Tom Fried, Driver		Signature: <i>[Signature]</i>			Month Day Year: 11 14 2016								
Address and telephone no.: 6105 5105, 800-225-0538 166 Lafayette Rd, Slatersville, VT													
11. Transporter 2 (Acknowledgement of receipt of materials)													
Printed/typed name & title:		Signature:			Month Day Year:								
Address and telephone no.:													
12. Discrepancy indication space													
					Rejected: Yes <input type="checkbox"/> No <input type="checkbox"/>								
13. Waste disposal site owner or operator: Certification of receipt of asbestos materials covered by this manifest except as noted in item 12.													
Printed/typed name & title: Wm J. McKenna, Sr.		Signature: <i>[Signature]</i>			Month Day Year: 11 14 16								

ORIGINAL RETURN TO GENERATOR

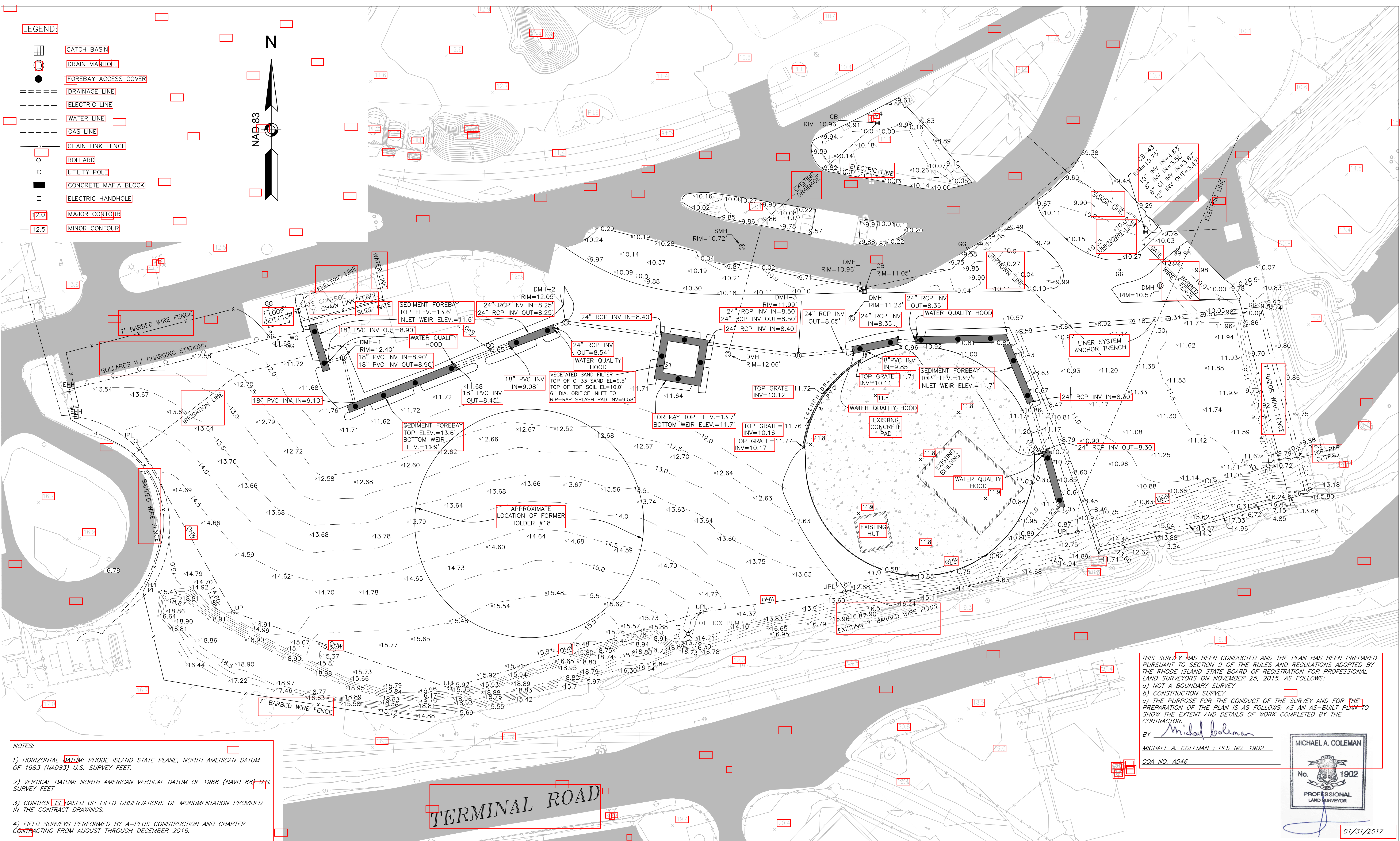
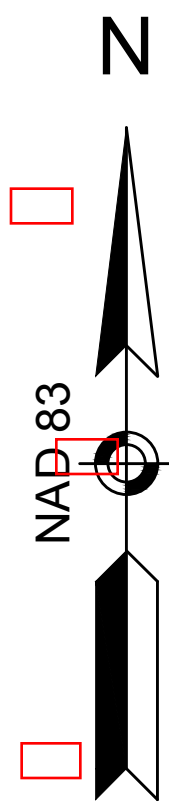


APPENDIX D

STAMPED AS-BUILT CONDITION PLANS

LEGEND:

- CATCH BASIN
- DRAIN MANHOLE
- FOREBAY ACCESS COVER
- DRAINAGE LINE
- ELECTRIC LINE
- WATER LINE
- GAS LINE
- CHAIN LINK FENCE
- BOLLARD
- UTILITY POLE
- CONCRETE MAFIA BLOCK
- ELECTRIC HANDHOLE
- 12.0 MAJOR CONTOUR
- 12.5 MINOR CONTOUR



NOTES:

- 1) HORIZONTAL DATUM: RHODE ISLAND STATE PLANE, NORTH AMERICAN DATUM OF 1983 (NAD83) U.S. SURVEY FEET.
- 2) VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) U.S. SURVEY FEET
- 3) CONTROL IS BASED UP FIELD OBSERVATIONS OF MONUMENTATION PROVIDED IN THE CONTRACT DRAWINGS.
- 4) FIELD SURVEYS PERFORMED BY A-PLUS CONSTRUCTION AND CHARTER CONTRACTING FROM AUGUST THROUGH DECEMBER 2016.

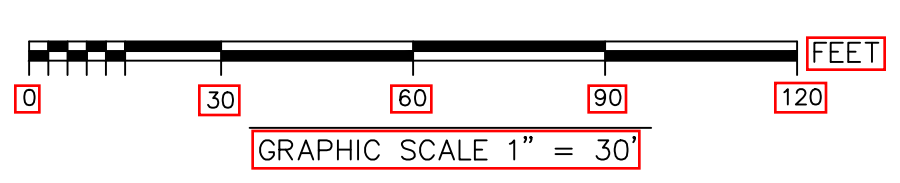
THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:

- a) NOT A BOUNDARY SURVEY
- b) CONSTRUCTION SURVEY
- c) THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR THE PREPARATION OF THE PLAN IS AS FOLLOWS: AS AN AS-BUILT PLAN TO SHOW THE EXTENT AND DETAILS OF WORK COMPLETED BY THE CONTRACTOR.

BY: *Michael Coleman*
 MICHAEL A. COLEMAN ; PLS. NO. 1902
 COA NO. A546



01/31/2017



REVISIONS		
REV.	COMMENTS	DATE

PREPARED BY:
A-PLUS CONSTRUCTION SERVICES CORPORATION
 17 ACCORD PARK DRIVE, UNIT 102, NORWELL, MASS.
 TEL: (781) 681-6667 FAX: (781) 681-6673

ORIGINAL FULL SIZE DRAWING=4"
 REPRODUCTIONS MAY BE REDUCED SIZE

FIELD CHIEF: BH DES/COMP: BH DRAFTED BY: BH CHECKED BY: MC
 DATE: 12 DEC 16 SCALE: 1" = 30 FT. A-PLUS #: 3654 FILE: 642 ALLENS AVE.DWG

AS-BUILT PLAN - SUB GRADE
NATIONAL GRID - 642 ALLENS AVENUE
PROVIDENCE, RHODE ISLAND

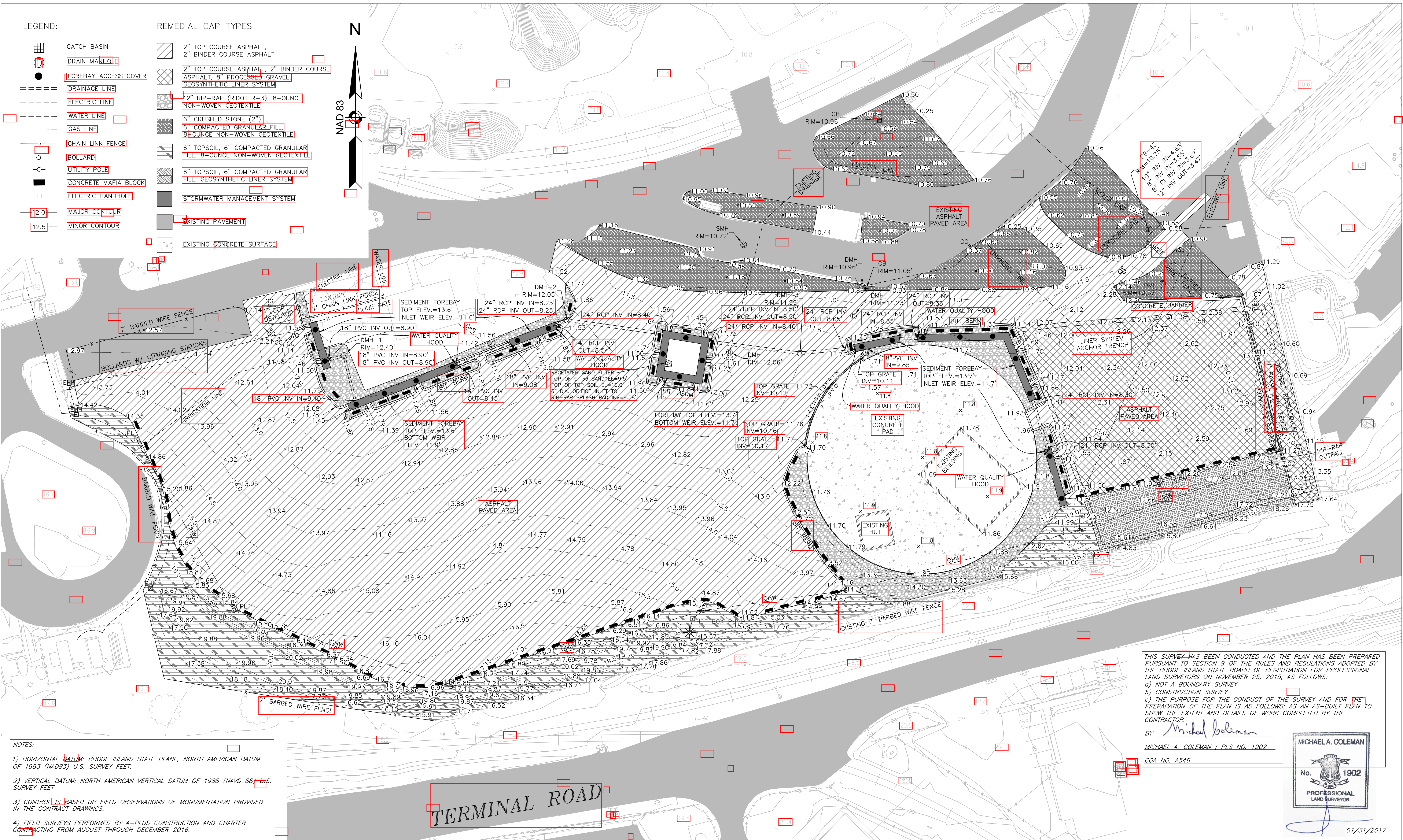
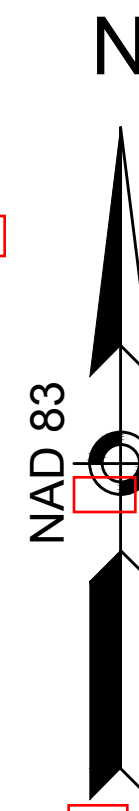
PREPARED FOR:
CHARTER ENVIRONMENTAL

SHEET
2 of 2
 OF
 REV. 0

LEGEND:

REMEDIAL CAP TYPES

- CATCH BASIN
- DRAIN MANHOLE
- FOREBAY ACCESS COVER
- DRAINAGE LINE
- ELECTRIC LINE
- WATER LINE
- GAS LINE
- CHAIN LINK FENCE
- BOLLARD
- UTILITY POLE
- CONCRETE MAFIA BLOCK
- ELECTRIC HANDHOLE
- 12.0 MAJOR CONTOUR
- 12.5 MINOR CONTOUR
- 2" TOP COURSE ASPHALT, 2" BINDER COURSE ASPHALT
- 2" TOP COURSE ASPHALT, 2" BINDER COURSE ASPHALT, 8" PROCESSED GRAVEL, GEOSYNTHETIC LINER SYSTEM
- 12" RIP-RAP (RIDOT R-3), 8-OUNCE NON-WOVEN GEOTEXTILE
- 6" CRUSHED STONE (2")
- 6" COMPACTED GRANULAR FILL, 8-OUNCE NON-WOVEN GEOTEXTILE
- 6" TOPSOIL, 6" COMPACTED GRANULAR FILL, 8-OUNCE NON-WOVEN GEOTEXTILE
- 6" TOPSOIL, 6" COMPACTED GRANULAR FILL, GEOSYNTHETIC LINER SYSTEM
- STORMWATER MANAGEMENT SYSTEM
- EXISTING PAVEMENT
- EXISTING CONCRETE SURFACE



NOTES:

- 1) HORIZONTAL DATUM: RHODE ISLAND STATE PLANE, NORTH AMERICAN DATUM OF 1983 (NAD83) U.S. SURVEY FEET.
- 2) VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) U.S. SURVEY FEET
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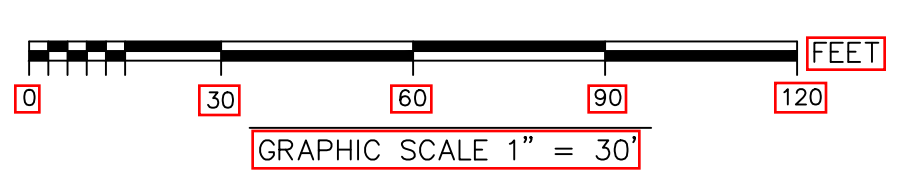
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By: *Michael Coleman*
 MICHAEL A. COLEMAN ; PLS. NO. 1902
 COA NO. A546



01/31/2017



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PREPARED BY:
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FIELD CHIEF: BH DES/COMP: BH DRAFTED BY: BH CHECKED BY: MC
 DATE: 12 DEC 16 SCALE: 1" = 30 FT. A-PLUS #: 3654 FILE: 642 ALLENS AVE.DWG

AS-BUILT PLAN - FINISH GRADE
NATIONAL GRID - 642 ALLENS AVENUE
PROVIDENCE, RHODE ISLAND

PREPARED FOR:
CHARTER ENVIRONMENTAL

SHEET
1 of 2
 OF
 REV. 0



APPENDIX E

IMPORTED SOIL LABORATORY REPORTS



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1608049

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 11:38 am, Aug 11, 2016

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 NELAC Standards, A2LA 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

Compaction Profile, Grain Size Analysis, Modified Proctor, Moisture Content, Sample Crushing Fee, Soil Classification



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

SAMPLE RECEIPT

The following samples were received on August 02, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

These samples were originally received for As only on August 1, 2016. Samples were logged in for TPH, VOA, SVOA, PP13 Metals, PCB, and Pesticides on August 2, 2016.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1608049-01	3/4" Washed Stone	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D
1608049-02	Washed Dust (C-33 Sand)	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D
1608049-03	3/4 DGA (Processed Gravel)	Soil	§, §, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D
1608049-04	2-4 RIPRAP	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D
1608049-05	2" Stone	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D
1608049-06	1.5" DGA (Granular Fill)	Soil	§, §, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CH60124-BSD1 **Blank Spike recovery is below lower control limit (B-).**

Chloroethane (50% @ 70-130%)

CH60124-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**

Chloroethane (35% @ 25%)

8270D Semi-Volatile Organic Compounds

CZH0008-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (78% @ 80-120%), Benzoic Acid (87% @ 80-120%), bis(2-Ethylhexyl)phthalate (92% @ 80-120%), Di-n-octylphthalate (81% @ 80-120%)

CZH0008-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

2,4-Dinitrophenol (22% @ 20%)

CZH0008-CCV1 **Initial Calibration Verification recovery is above upper control limit (ICV+).**

Benzoic Acid

CZH0029-CCV1 **Calibration required quadratic regression (Q).**

2,4-Dinitrophenol (68% @ 80-120%), Benzoic Acid (86% @ 80-120%), bis(2-Ethylhexyl)phthalate (92% @ 80-120%), Di-n-octylphthalate (80% @ 80-120%)

CZH0029-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**

4-Nitroaniline (27% @ 20%)

CZH0029-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**

2,4-Dinitrophenol (32% @ 20%)

CZH0029-CCV1 **Initial Calibration Verification recovery is above upper control limit (ICV+).**

Benzoic Acid

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1608049

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
- 8015D - 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: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.45)		6020A		20	NAR	08/06/16 13:07	2.31	100	CH60110
Arsenic	ND (2.23)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Beryllium	0.29 (0.10)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Cadmium	ND (0.45)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Chromium	3.44 (0.89)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Copper	7.53 (2.23)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Lead	7.85 (4.46)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Mercury	ND (0.033)		7471B		1	BJV	08/05/16 12:19	0.61	40	CH60111
Nickel	2.59 (2.23)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Selenium	ND (0.45)		6020A		20	NAR	08/06/16 13:07	2.31	100	CH60110
Silver	ND (0.45)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110
Thallium	ND (0.45)		6020A		20	NAR	08/06/16 13:07	2.31	100	CH60110
Zinc	23.5 (2.23)		6010C		1	KJK	08/01/16 20:11	2.31	100	CH60110



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 3/4 DGA (Processed Gravel)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 97
 Initial Volume: 5.5
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,1,1-Trichloroethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,1,2,2-Tetrachloroethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,1,2-Trichloroethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,1-Dichloroethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,1-Dichloroethene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,1-Dichloropropene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2,3-Trichlorobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2,3-Trichloropropane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2,4-Trichlorobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2,4-Trimethylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2-Dibromo-3-Chloropropane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2-Dibromoethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2-Dichlorobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2-Dichloroethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,2-Dichloropropane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,3,5-Trimethylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,3-Dichlorobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,3-Dichloropropane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,4-Dichlorobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1,4-Dioxane	ND (0.0937)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
1-Chlorohexane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
2,2-Dichloropropane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
2-Butanone	ND (0.0468)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
2-Chlorotoluene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
2-Hexanone	ND (0.0468)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
4-Chlorotoluene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
4-Isopropyltoluene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
4-Methyl-2-Pentanone	ND (0.0468)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Acetone	ND (0.0468)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Benzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Bromobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Bromodichloromethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Bromoform	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Bromomethane	ND (0.0094)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Carbon Disulfide	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Carbon Tetrachloride	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Chlorobenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Chloroethane	ND (0.0094)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Chloroform	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Chloromethane	ND (0.0094)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
cis-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
cis-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Dibromochloromethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Dibromomethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Dichlorodifluoromethane	ND (0.0094)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Diethyl Ether	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Di-isopropyl ether	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Ethyl tertiary-butyl ether	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Ethylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Hexachlorobutadiene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Isopropylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Methyl tert-Butyl Ether	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Methylene Chloride	ND (0.0234)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Naphthalene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
n-Butylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
n-Propylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
sec-Butylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Styrene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
tert-Butylbenzene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Tertiary-amyl methyl ether	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Tetrachloroethene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Tetrahydrofuran	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 5.5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
trans-1,2-Dichloroethene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
trans-1,3-Dichloropropene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Trichloroethene	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Trichlorofluoromethane	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Vinyl Acetate	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Vinyl Chloride	ND (0.0094)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Xylene O	ND (0.0047)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Xylene P,M	ND (0.0094)		8260B Low		1	08/01/16 16:25	CZH0014	CH60124
Xylenes (Total)	ND (0.0094)		8260B Low		1	08/01/16 16:25		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	109 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	82 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	100 %		70-130
<i>Surrogate: Toluene-d8</i>	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/2/16 15:49

8081B Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
4,4'-DDE	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
4,4'-DDT	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Aldrin	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
alpha-BHC	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
alpha-Chlordane	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
beta-BHC	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Chlordane (Total)	ND (0.0315)		8081B		1	08/03/16 0:17	CZH0036	CH60138
delta-BHC	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Dieldrin	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Endosulfan I	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Endosulfan II	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Endosulfan Sulfate	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Endrin	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Endrin Aldehyde	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Endrin Ketone	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	08/03/16 0:17	CZH0036	CH60138
gamma-Chlordane	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Heptachlor	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Heptachlor Epoxide	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Hexachlorobenzene	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Methoxychlor	ND (0.0026)		8081B		1	08/03/16 0:17	CZH0036	CH60138
Toxaphene	ND (0.131)		8081B		1	08/03/16 0:17	CZH0036	CH60138

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	75 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	72 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	64 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 10.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 8/2/16 16:32

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1221	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1232	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1242	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1248	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1254	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1260	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1262	ND (0.101)		8082A		1	08/03/16 14:43		CH60206
Aroclor 1268	ND (0.101)		8082A		1	08/03/16 14:43		CH60206

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	75 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	70 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	75 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 20.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 8/2/16 15:33

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (38.4)		8100M		1	08/02/16 19:27	CZH0027	CH60116
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>91 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/2/16 15:18

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
1,2,4-Trichlorobenzene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
1,2-Dichlorobenzene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
1,3-Dichlorobenzene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
1,4-Dichlorobenzene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,3,4,6-Tetrachlorophenol	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,4,5-Trichlorophenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,4,6-Trichlorophenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,4-Dichlorophenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,4-Dimethylphenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,4-Dinitrophenol	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,4-Dinitrotoluene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2,6-Dinitrotoluene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2-Chloronaphthalene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2-Chlorophenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2-Methylnaphthalene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2-Methylphenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2-Nitroaniline	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
2-Nitrophenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
3,3'-Dichlorobenzidine	ND (0.721)		8270D		1	08/02/16 23:56	CZH0029	CH60115
3+4-Methylphenol	ND (0.721)		8270D		1	08/02/16 23:56	CZH0029	CH60115
3-Nitroaniline	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4,6-Dinitro-2-Methylphenol	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4-Bromophenyl-phenylether	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4-Chloro-3-Methylphenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4-Chloroaniline	ND (0.721)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4-Chloro-phenyl-phenyl ether	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4-Nitroaniline	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
4-Nitrophenol	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Acenaphthene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Acenaphthylene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Acetophenone	ND (0.721)		8270D		1	08/02/16 23:56	CZH0029	CH60115



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/2/16 15:18

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.721)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Anthracene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Azobenzene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzo(a)anthracene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzo(a)pyrene	ND (0.180)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzo(b)fluoranthene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzo(g,h,i)perylene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzo(k)fluoranthene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzoic Acid	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Benzyl Alcohol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
bis(2-Chloroethoxy)methane	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
bis(2-Chloroethyl)ether	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
bis(2-chloroisopropyl)Ether	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
bis(2-Ethylhexyl)phthalate	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Butylbenzylphthalate	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Carbazole	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Chrysene	ND (0.180)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Dibenzo(a,h)Anthracene	ND (0.180)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Dibenzofuran	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Diethylphthalate	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Dimethylphthalate	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Di-n-butylphthalate	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Di-n-octylphthalate	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Fluoranthene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Fluorene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Hexachlorobenzene	ND (0.180)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Hexachlorobutadiene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Hexachlorocyclopentadiene	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Hexachloroethane	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Indeno(1,2,3-cd)Pyrene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Isophorone	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Naphthalene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00
Percent Solids: 97
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/2/16 15:18

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
N-Nitrosodimethylamine	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
N-Nitroso-Di-n-Propylamine	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
N-nitrosodiphenylamine	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Pentachlorophenol	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Phenanthrene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Phenol	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Pyrene	ND (0.360)		8270D		1	08/02/16 23:56	CZH0029	CH60115
Pyridine	ND (1.80)		8270D		1	08/02/16 23:56	CZH0029	CH60115

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>84 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>109 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>89 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>93 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>91 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>92 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>92 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>104 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Grain Size	See Attached (N/A)								
Modified Proctor	See Attached (N/A)								
Moisture Content	See Attached (1.0)								
Soil Classification	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 3/4 DGA (Processed Gravel)
Date Sampled: 08/01/16 11:00

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-03
Sample Matrix: Soil
Units: %

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Frequency</u>	<u>Batch</u>
Proctor	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 1.5" DGA (Granular Fill)
Date Sampled: 08/01/16 11:00
Percent Solids: 99

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.40)		6020A		20	NAR	08/06/16 13:24	2.51	100	CH60110
Arsenic	ND (4.03)		6010C		2	KJK	08/02/16 0:27	2.51	100	CH60110
Beryllium	0.41 (0.09)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Cadmium	ND (0.40)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Chromium	30.1 (0.81)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Copper	24.8 (2.02)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Lead	ND (4.03)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Mercury	ND (0.031)		7471B		1	BJV	08/05/16 12:25	0.65	40	CH60111
Nickel	17.8 (2.02)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Selenium	ND (0.40)		6020A		20	NAR	08/06/16 13:24	2.51	100	CH60110
Silver	ND (0.40)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110
Thallium	ND (0.40)		6020A		20	NAR	08/06/16 13:24	2.51	100	CH60110
Zinc	47.0 (2.02)		6010C		1	KJK	08/01/16 20:36	2.51	100	CH60110



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 1.5" DGA (Granular Fill)
Date Sampled: 08/01/16 11:00
Percent Solids: 99
Initial Volume: 4.9
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,1,1-Trichloroethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,1,2,2-Tetrachloroethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,1,2-Trichloroethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,1-Dichloroethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,1-Dichloroethene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,1-Dichloropropene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2,3-Trichlorobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2,3-Trichloropropane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2,4-Trichlorobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2,4-Trimethylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2-Dibromo-3-Chloropropane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2-Dibromoethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2-Dichlorobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2-Dichloroethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,2-Dichloropropane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,3,5-Trimethylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,3-Dichlorobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,3-Dichloropropane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,4-Dichlorobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1,4-Dioxane	ND (0.103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
1-Chlorohexane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
2,2-Dichloropropane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
2-Butanone	ND (0.0516)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
2-Chlorotoluene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
2-Hexanone	ND (0.0516)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
4-Chlorotoluene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
4-Isopropyltoluene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
4-Methyl-2-Pentanone	ND (0.0516)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Acetone	ND (0.0516)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Benzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Bromobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 1.5" DGA (Granular Fill)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 99
 Initial Volume: 4.9
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Bromodichloromethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Bromoform	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Bromomethane	ND (0.0103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Carbon Disulfide	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Carbon Tetrachloride	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Chlorobenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Chloroethane	ND (0.0103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Chloroform	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Chloromethane	ND (0.0103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
cis-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
cis-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Dibromochloromethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Dibromomethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Dichlorodifluoromethane	ND (0.0103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Diethyl Ether	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Di-isopropyl ether	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Ethyl tertiary-butyl ether	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Ethylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Hexachlorobutadiene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Isopropylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Methyl tert-Butyl Ether	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Methylene Chloride	ND (0.0258)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Naphthalene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
n-Butylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
n-Propylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
sec-Butylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Styrene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
tert-Butylbenzene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Tertiary-amyl methyl ether	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Tetrachloroethene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Tetrahydrofuran	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 1.5" DGA (Granular Fill)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 99
 Initial Volume: 4.9
 Final Volume: 10
 Extraction Method: 5035

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
trans-1,2-Dichloroethene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
trans-1,3-Dichloropropene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Trichloroethene	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Trichlorofluoromethane	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Vinyl Acetate	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Vinyl Chloride	ND (0.0103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Xylene O	ND (0.0052)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Xylene P,M	ND (0.0103)		8260B Low		1	08/01/16 17:49	CZH0014	CH60124
Xylenes (Total)	ND (0.0103)		8260B Low		1	08/01/16 17:49		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	82 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	99 %		70-130
<i>Surrogate: Toluene-d8</i>	96 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 1.5" DGA (Granular Fill)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 99
 Initial Volume: 19.4
 Final Volume: 5
 Extraction Method: 3546

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 8/2/16 15:49

8081B Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
4,4'-DDE	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
4,4'-DDT	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Aldrin	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
alpha-BHC	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
alpha-Chlordane	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
beta-BHC	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Chlordane (Total)	ND (0.0313)		8081B		1	08/03/16 1:43	CZH0036	CH60138
delta-BHC	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Dieldrin	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Endosulfan I	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Endosulfan II	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Endosulfan Sulfate	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Endrin	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Endrin Aldehyde	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Endrin Ketone	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	08/03/16 1:43	CZH0036	CH60138
gamma-Chlordane	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Heptachlor	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Heptachlor Epoxide	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Hexachlorobenzene	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Methoxychlor	ND (0.0026)		8081B		1	08/03/16 1:43	CZH0036	CH60138
Toxaphene	ND (0.130)		8081B		1	08/03/16 1:43	CZH0036	CH60138

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	84 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	72 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	70 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 1.5" DGA (Granular Fill)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 99
 Initial Volume: 10.2
 Final Volume: 10
 Extraction Method: 3540C

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: SMR
 Prepared: 8/2/16 16:32

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1221	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1232	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1242	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1248	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1254	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1260	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1262	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206
Aroclor 1268	ND (0.0992)		8082A		1	08/03/16 15:40		CH60206

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	70 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	73 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	63 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	68 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 1.5" DGA (Granular Fill)
Date Sampled: 08/01/16 11:00
Percent Solids: 99
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 8/2/16 15:33

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (39.1)		8100M		1	08/02/16 21:23	CZH0027	CH60116
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		88 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 1.5" DGA (Granular Fill)
Date Sampled: 08/01/16 11:00
Percent Solids: 99
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/2/16 15:18

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
1,2,4-Trichlorobenzene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
1,2-Dichlorobenzene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
1,3-Dichlorobenzene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
1,4-Dichlorobenzene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,3,4,6-Tetrachlorophenol	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,4,5-Trichlorophenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,4,6-Trichlorophenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,4-Dichlorophenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,4-Dimethylphenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,4-Dinitrophenol	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,4-Dinitrotoluene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2,6-Dinitrotoluene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2-Chloronaphthalene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2-Chlorophenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2-Methylnaphthalene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2-Methylphenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2-Nitroaniline	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
2-Nitrophenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
3,3'-Dichlorobenzidine	ND (0.703)		8270D		1	08/02/16 22:46	CZH0029	CH60115
3+4-Methylphenol	ND (0.703)		8270D		1	08/02/16 22:46	CZH0029	CH60115
3-Nitroaniline	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4,6-Dinitro-2-Methylphenol	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4-Bromophenyl-phenylether	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4-Chloro-3-Methylphenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4-Chloroaniline	ND (0.703)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4-Chloro-phenyl-phenyl ether	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4-Nitroaniline	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
4-Nitrophenol	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Acenaphthene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Acenaphthylene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Acetophenone	ND (0.703)		8270D		1	08/02/16 22:46	CZH0029	CH60115



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 1.5" DGA (Granular Fill)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 99
 Initial Volume: 14.4
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 8/2/16 15:18

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.703)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Anthracene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Azobenzene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzo(a)anthracene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzo(a)pyrene	ND (0.176)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzo(b)fluoranthene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzo(g,h,i)perylene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzo(k)fluoranthene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzoic Acid	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Benzyl Alcohol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
bis(2-Chloroethoxy)methane	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
bis(2-Chloroethyl)ether	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
bis(2-chloroisopropyl)Ether	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
bis(2-Ethylhexyl)phthalate	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Butylbenzylphthalate	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Carbazole	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Chrysene	ND (0.176)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Dibenzo(a,h)Anthracene	ND (0.176)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Dibenzofuran	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Diethylphthalate	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Dimethylphthalate	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Di-n-butylphthalate	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Di-n-octylphthalate	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Fluoranthene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Fluorene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Hexachlorobenzene	ND (0.176)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Hexachlorobutadiene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Hexachlorocyclopentadiene	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Hexachloroethane	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Indeno(1,2,3-cd)Pyrene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Isophorone	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Naphthalene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: 1.5" DGA (Granular Fill)
 Date Sampled: 08/01/16 11:00
 Percent Solids: 99
 Initial Volume: 14.4
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1608049
 ESS Laboratory Sample ID: 1608049-06
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 8/2/16 15:18

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
N-Nitrosodimethylamine	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
N-Nitroso-Di-n-Propylamine	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
N-nitrosodiphenylamine	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Pentachlorophenol	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Phenanthrene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Phenol	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Pyrene	ND (0.351)		8270D		1	08/02/16 22:46	CZH0029	CH60115
Pyridine	ND (1.76)		8270D		1	08/02/16 22:46	CZH0029	CH60115

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	79 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	97 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	86 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	90 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	89 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	88 %		30-130
<i>Surrogate: Phenol-d6</i>	90 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	95 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 1.5" DGA (Granular Fill)
Date Sampled: 08/01/16 11:00

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-06
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Grain Size	See Attached (N/A)								
Modified Proctor	See Attached (N/A)								
Moisture Content	See Attached (1.0)								
Soil Classification	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: 1.5" DGA (Granular Fill)
Date Sampled: 08/01/16 11:00

ESS Laboratory Work Order: 1608049
ESS Laboratory Sample ID: 1608049-06
Sample Matrix: Soil
Units: %

Subcontracted Analysis

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Frequency</u>	<u>Batch</u>
Proctor	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CH60110 - 3050B

Blank

Antimony	ND	0.50	mg/kg wet
Arsenic	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
Copper	ND	2.50	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
Zinc	ND	2.50	mg/kg wet

LCS

Antimony	135	24.0	mg/kg wet	100.0	135	19-257
Arsenic	154	9.62	mg/kg wet	161.0	96	80-120
Beryllium	88.1	0.42	mg/kg wet	89.40	98	80-120
Cadmium	181	1.92	mg/kg wet	190.0	95	80-120
Chromium	87.0	3.85	mg/kg wet	87.90	99	80-120
Copper	271	9.62	mg/kg wet	258.0	105	80-120
Lead	142	19.2	mg/kg wet	138.0	103	80-120
Nickel	132	9.62	mg/kg wet	127.0	104	80-120
Selenium	322	24.0	mg/kg wet	305.0	106	80-120
Silver	59.1	1.92	mg/kg wet	58.00	102	80-120
Thallium	92.5	24.0	mg/kg wet	89.80	103	80-120
Zinc	170	9.62	mg/kg wet	173.0	98	80-120

LCS Dup

Antimony	130	23.1	mg/kg wet	100.0	130	19-257	4	30
Arsenic	147	9.26	mg/kg wet	161.0	91	80-120	5	20
Beryllium	85.1	0.41	mg/kg wet	89.40	95	80-120	3	20
Cadmium	174	1.85	mg/kg wet	190.0	91	80-120	4	20
Chromium	83.9	3.70	mg/kg wet	87.90	96	80-120	4	20
Copper	254	9.26	mg/kg wet	258.0	98	80-120	6	20
Lead	137	18.5	mg/kg wet	138.0	99	80-120	4	20
Nickel	126	9.26	mg/kg wet	127.0	99	80-120	5	20
Selenium	326	23.1	mg/kg wet	305.0	107	80-120	1	30
Silver	57.2	1.85	mg/kg wet	58.00	99	80-120	3	20
Thallium	88.9	23.1	mg/kg wet	89.80	99	80-120	4	30
Zinc	159	9.26	mg/kg wet	173.0	92	80-120	6	20

Batch CH60111 - 7471B

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	9.95	1.94	mg/kg wet	9.700	103	80-120
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CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CH60111 - 7471B

LCS Dup

Mercury	9.91	1.87	mg/kg wet	9.700		102	80-120	0.4	20	
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH60124 - 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	0.0050	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
1-Chlorohexane	ND	0.0050	mg/kg wet
2,2-Dichloropropane	ND	0.0050	mg/kg wet
2-Butanone	ND	0.0500	mg/kg wet
2-Chlorotoluene	ND	0.0050	mg/kg wet
2-Hexanone	ND	0.0500	mg/kg wet
4-Chlorotoluene	ND	0.0050	mg/kg wet
4-Isopropyltoluene	ND	0.0050	mg/kg wet
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet
Acetone	ND	0.0500	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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH60124 - 5035

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	0.0050	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	0.0250	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 Acetate	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	0.0507		mg/kg wet	0.05000		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0380		mg/kg wet	0.05000		76	70-130			
Surrogate: Dibromofluoromethane	0.0501		mg/kg wet	0.05000		100	70-130			
Surrogate: Toluene-d8	0.0472		mg/kg wet	0.05000		94	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
1,1,1-Trichloroethane	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,1,2,2-Tetrachloroethane	0.0439	0.0050	mg/kg wet	0.05000		88	70-130			
1,1,2-Trichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
1,1-Dichloroethane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH60124 - 5035

1,1-Dichloroethene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
1,1-Dichloropropene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,3-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
1,2,3-Trichloropropane	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
1,2,4-Trichlorobenzene	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
1,2,4-Trimethylbenzene	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,2-Dibromo-3-Chloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,2-Dibromoethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichlorobenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
1,2-Dichloroethane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130			
1,2-Dichloropropane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,3,5-Trimethylbenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130			
1,3-Dichlorobenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
1,3-Dichloropropane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,4-Dioxane	1.10	0.100	mg/kg wet	1.000		110	70-130			
1-Chlorohexane	0.0448	0.0050	mg/kg wet	0.05000		90	70-130			
2,2-Dichloropropane	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			
2-Butanone	0.218	0.0500	mg/kg wet	0.2500		87	70-130			
2-Chlorotoluene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
2-Hexanone	0.211	0.0500	mg/kg wet	0.2500		84	70-130			
4-Chlorotoluene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
4-Isopropyltoluene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130			
4-Methyl-2-Pentanone	0.216	0.0500	mg/kg wet	0.2500		87	70-130			
Acetone	0.277	0.0500	mg/kg wet	0.2500		111	70-130			
Benzene	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Bromobenzene	0.0438	0.0050	mg/kg wet	0.05000		88	70-130			
Bromochloromethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Bromodichloromethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Bromoform	0.0514	0.0050	mg/kg wet	0.05000		103	70-130			
Bromomethane	0.0546	0.0100	mg/kg wet	0.05000		109	70-130			
Carbon Disulfide	0.0542	0.0050	mg/kg wet	0.05000		108	70-130			
Carbon Tetrachloride	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
Chlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Chloroethane	0.0360	0.0100	mg/kg wet	0.05000		72	70-130			
Chloroform	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
Chloromethane	0.0466	0.0100	mg/kg wet	0.05000		93	70-130			
cis-1,2-Dichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
cis-1,3-Dichloropropene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			
Dibromochloromethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Dibromomethane	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
Dichlorodifluoromethane	0.0413	0.0100	mg/kg wet	0.05000		83	70-130			
Diethyl Ether	0.0430	0.0050	mg/kg wet	0.05000		86	70-130			
Di-isopropyl ether	0.0431	0.0050	mg/kg wet	0.05000		86	70-130			
Ethyl tertiary-butyl ether	0.0435	0.0050	mg/kg wet	0.05000		87	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH60124 - 5035

Ethylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Hexachlorobutadiene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Isopropylbenzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Methyl tert-Butyl Ether	0.0425	0.0050	mg/kg wet	0.05000		85	70-130			
Methylene Chloride	0.0531	0.0250	mg/kg wet	0.05000		106	70-130			
Naphthalene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
n-Butylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130			
n-Propylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130			
sec-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Styrene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
tert-Butylbenzene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Tertiary-amyl methyl ether	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Tetrachloroethene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130			
Tetrahydrofuran	0.0375	0.0050	mg/kg wet	0.05000		75	70-130			
Toluene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
trans-1,2-Dichloroethene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130			
trans-1,3-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Trichloroethene	0.0521	0.0050	mg/kg wet	0.05000		104	70-130			
Trichlorofluoromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130			
Vinyl Acetate	0.0358	0.0050	mg/kg wet	0.05000		72	70-130			
Vinyl Chloride	0.0460	0.0100	mg/kg wet	0.05000		92	70-130			
Xylene O	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.105	0.0100	mg/kg wet	0.1000		105	70-130			
Xylenes (Total)	0.154	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0448		mg/kg wet	0.05000		90	70-130			
Surrogate: 4-Bromofluorobenzene	0.0483		mg/kg wet	0.05000		97	70-130			
Surrogate: Dibromofluoromethane	0.0455		mg/kg wet	0.05000		91	70-130			
Surrogate: Toluene-d8	0.0476		mg/kg wet	0.05000		95	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	9	25	
1,1,1-Trichloroethane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	0.5	25	
1,1,2,2-Tetrachloroethane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	2	25	
1,1,2-Trichloroethane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
1,1-Dichloroethane	0.0431	0.0050	mg/kg wet	0.05000		86	70-130	0.9	25	
1,1-Dichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	6	25	
1,1-Dichloropropene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
1,2,3-Trichlorobenzene	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	5	25	
1,2,3-Trichloropropane	0.0477	0.0050	mg/kg wet	0.05000		95	70-130	0.5	25	
1,2,4-Trichlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	4	25	
1,2,4-Trimethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
1,2-Dibromo-3-Chloropropane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	11	25	
1,2-Dibromoethane	0.0517	0.0050	mg/kg wet	0.05000		103	70-130	9	25	
1,2-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,2-Dichloroethane	0.0416	0.0050	mg/kg wet	0.05000		83	70-130	0.6	25	
1,2-Dichloropropane	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	1	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH60124 - 5035

1,3,5-Trimethylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	7	25	
1,3-Dichlorobenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
1,3-Dichloropropane	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	3	25	
1,4-Dichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
1,4-Dioxane	0.961	0.100	mg/kg wet	1.000		96	70-130	13	20	
1-Chlorohexane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130	8	25	
2,2-Dichloropropane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
2-Butanone	0.204	0.0500	mg/kg wet	0.2500		81	70-130	7	25	
2-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
2-Hexanone	0.211	0.0500	mg/kg wet	0.2500		84	70-130	0.1	25	
4-Chlorotoluene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
4-Isopropyltoluene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
4-Methyl-2-Pentanone	0.207	0.0500	mg/kg wet	0.2500		83	70-130	4	25	
Acetone	0.250	0.0500	mg/kg wet	0.2500		100	70-130	10	25	
Benzene	0.0528	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
Bromobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	7	25	
Bromochloromethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
Bromodichloromethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
Bromoform	0.0542	0.0050	mg/kg wet	0.05000		108	70-130	5	25	
Bromomethane	0.0532	0.0100	mg/kg wet	0.05000		106	70-130	3	25	
Carbon Disulfide	0.0545	0.0050	mg/kg wet	0.05000		109	70-130	0.6	25	
Carbon Tetrachloride	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	3	25	
Chlorobenzene	0.0479	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
Chloroethane	0.0252	0.0100	mg/kg wet	0.05000		50	70-130	35	25	B-, D+
Chloroform	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	0.7	25	
Chloromethane	0.0432	0.0100	mg/kg wet	0.05000		86	70-130	8	25	
cis-1,2-Dichloroethene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
cis-1,3-Dichloropropene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Dibromochloromethane	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Dibromomethane	0.0415	0.0050	mg/kg wet	0.05000		83	70-130	4	25	
Dichlorodifluoromethane	0.0406	0.0100	mg/kg wet	0.05000		81	70-130	2	25	
Diethyl Ether	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
Di-isopropyl ether	0.0421	0.0050	mg/kg wet	0.05000		84	70-130	2	25	
Ethyl tertiary-butyl ether	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
Ethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	6	25	
Hexachlorobutadiene	0.0549	0.0050	mg/kg wet	0.05000		110	70-130	12	25	
Isopropylbenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	7	25	
Methyl tert-Butyl Ether	0.0419	0.0050	mg/kg wet	0.05000		84	70-130	1	25	
Methylene Chloride	0.0533	0.0250	mg/kg wet	0.05000		107	70-130	0.2	25	
Naphthalene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
n-Butylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
n-Propylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
sec-Butylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	5	25	
Styrene	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	7	25	
tert-Butylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	6	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CH60124 - 5035

Tertiary-amyl methyl ether	0.0442	0.0050	mg/kg wet	0.05000		88	70-130	2	25	
Tetrachloroethene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	8	25	
Tetrahydrofuran	0.0355	0.0050	mg/kg wet	0.05000		71	70-130	6	25	
Toluene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130	0.6	25	
trans-1,2-Dichloroethene	0.0433	0.0050	mg/kg wet	0.05000		87	70-130	0.1	25	
trans-1,3-Dichloropropene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	0.4	25	
Trichloroethene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Trichlorofluoromethane	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	0.1	25	
Vinyl Acetate	0.0349	0.0050	mg/kg wet	0.05000		70	70-130	3	25	
Vinyl Chloride	0.0424	0.0100	mg/kg wet	0.05000		85	70-130	8	25	
Xylene O	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	6	25	
Xylene P,M	0.111	0.0100	mg/kg wet	0.1000		111	70-130	6	25	
Xylenes (Total)	0.163	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0428		mg/kg wet	0.05000		86	70-130			
Surrogate: 4-Bromofluorobenzene	0.0508		mg/kg wet	0.05000		102	70-130			
Surrogate: Dibromofluoromethane	0.0425		mg/kg wet	0.05000		85	70-130			
Surrogate: Toluene-d8	0.0493		mg/kg wet	0.05000		99	70-130			

8081B Organochlorine Pesticides

Batch CH60138 - 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	0.0300	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0300	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CH60138 - 3546

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 Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [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							
Toxaphene	ND	0.125	mg/kg wet							
Toxaphene [2C]	ND	0.125	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0118		mg/kg wet	0.01250		94	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0116		mg/kg wet	0.01250		93	30-150			
Surrogate: Tetrachloro-m-xylene	0.0113		mg/kg wet	0.01250		90	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0112		mg/kg wet	0.01250		90	30-150			

LCS

4,4'-DDD	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
4,4'-DDD [2C]	0.0108	0.0025	mg/kg wet	0.01250		87	40-140			
4,4'-DDE	0.0111	0.0025	mg/kg wet	0.01250		88	40-140			
4,4'-DDE [2C]	0.0105	0.0025	mg/kg wet	0.01250		84	40-140			
4,4'-DDT	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
4,4'-DDT [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
Aldrin	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
Aldrin [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
alpha-BHC	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
alpha-BHC [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
alpha-Chlordane	0.0114	0.0025	mg/kg wet	0.01250		91	40-140			
alpha-Chlordane [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
beta-BHC	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
beta-BHC [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
delta-BHC	0.0114	0.0025	mg/kg wet	0.01250		92	40-140			
delta-BHC [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Dieldrin	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CH60138 - 3546

Dieldrin [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Endosulfan I	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan I [2C]	0.0113	0.0025	mg/kg wet	0.01250		91	40-140			
Endosulfan II	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endosulfan II [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endosulfan Sulfate	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan Sulfate [2C]	0.0118	0.0025	mg/kg wet	0.01250		95	40-140			
Endrin	0.0118	0.0025	mg/kg wet	0.01250		95	40-140			
Endrin [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Endrin Aldehyde	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
Endrin Aldehyde [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140			
Endrin Ketone	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Endrin Ketone [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
gamma-BHC (Lindane)	0.0119	0.0015	mg/kg wet	0.01250		95	40-140			
gamma-BHC (Lindane) [2C]	0.0120	0.0015	mg/kg wet	0.01250		96	40-140			
gamma-Chlordane	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
gamma-Chlordane [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Heptachlor Epoxide	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
Heptachlor Epoxide [2C]	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Hexachlorobenzene	0.0123	0.0025	mg/kg wet	0.01250		99	40-140			
Hexachlorobenzene [2C]	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
Methoxychlor	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
Methoxychlor [2C]	0.0117	0.0025	mg/kg wet	0.01250		93	40-140			

Surrogate: Decachlorobiphenyl	0.0117		mg/kg wet	0.01250		94	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0117		mg/kg wet	0.01250		94	30-150			
Surrogate: Tetrachloro-m-xylene	0.0113		mg/kg wet	0.01250		91	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0112		mg/kg wet	0.01250		90	30-150			

LCS Dup

4,4'-DDD	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
4,4'-DDD [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	2	30	
4,4'-DDE	0.0104	0.0025	mg/kg wet	0.01250		83	40-140	6	30	
4,4'-DDE [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	0.5	30	
4,4'-DDT	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	9	30	
4,4'-DDT [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	7	30	
Aldrin	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	7	30	
Aldrin [2C]	0.0114	0.0025	mg/kg wet	0.01250		92	40-140	6	30	
alpha-BHC	0.0113	0.0025	mg/kg wet	0.01250		91	40-140	7	30	
alpha-BHC [2C]	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	5	30	
alpha-Chlordane	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
alpha-Chlordane [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	4	30	
beta-BHC	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	5	30	
beta-BHC [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	5	30	



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CH60138 - 3546

delta-BHC	0.0108	0.0025	mg/kg wet	0.01250		86	40-140	6	30	
delta-BHC [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140	5	30	
Dieldrin	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	6	30	
Dieldrin [2C]	0.0118	0.0025	mg/kg wet	0.01250		95	40-140	3	30	
Endosulfan I	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	5	30	
Endosulfan I [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	2	30	
Endosulfan II	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	6	30	
Endosulfan II [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	3	30	
Endosulfan Sulfate	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	6	30	
Endosulfan Sulfate [2C]	0.0113	0.0025	mg/kg wet	0.01250		90	40-140	5	30	
Endrin	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	7	30	
Endrin [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	4	30	
Endrin Aldehyde	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	6	30	
Endrin Aldehyde [2C]	0.0106	0.0025	mg/kg wet	0.01250		85	40-140	5	30	
Endrin Ketone	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	4	30	
Endrin Ketone [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	5	30	
gamma-BHC (Lindane)	0.0111	0.0015	mg/kg wet	0.01250		89	40-140	6	30	
gamma-BHC (Lindane) [2C]	0.0114	0.0015	mg/kg wet	0.01250		92	40-140	5	30	
gamma-Chlordane	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	6	30	
gamma-Chlordane [2C]	0.0111	0.0025	mg/kg wet	0.01250		89	40-140	4	30	
Heptachlor	0.0107	0.0025	mg/kg wet	0.01250		86	40-140	7	30	
Heptachlor [2C]	0.0112	0.0025	mg/kg wet	0.01250		89	40-140	5	30	
Heptachlor Epoxide	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	6	30	
Heptachlor Epoxide [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140	4	30	
Hexachlorobenzene	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	7	30	
Hexachlorobenzene [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140	5	30	
Methoxychlor	0.0105	0.0025	mg/kg wet	0.01250		84	40-140	12	30	
Methoxychlor [2C]	0.0109	0.0025	mg/kg wet	0.01250		87	40-140	7	30	
Surrogate: Decachlorobiphenyl	0.0108		mg/kg wet	0.01250		86	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0107		mg/kg wet	0.01250		86	30-150			
Surrogate: Tetrachloro-m-xylene	0.0106		mg/kg wet	0.01250		85	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0105		mg/kg wet	0.01250		84	30-150			

8082A Polychlorinated Biphenyls (PCB)

Batch CH60206 - 3540C

Blank

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CH60206 - 3540C

Aroclor 1268	ND	0.0500	mg/kg wet							
Surrogate: Decachlorobiphenyl	0.0179		mg/kg wet	0.02500		71	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0186		mg/kg wet	0.02500		74	30-150			
Surrogate: Tetrachloro-m-xylene	0.0156		mg/kg wet	0.02500		62	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0164		mg/kg wet	0.02500		66	30-150			

LCS

Aroclor 1016	0.370	0.0500	mg/kg wet	0.5000		74	40-140			
Aroclor 1260	0.421	0.0500	mg/kg wet	0.5000		84	40-140			
Surrogate: Decachlorobiphenyl	0.0191		mg/kg wet	0.02500		76	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0202		mg/kg wet	0.02500		81	30-150			
Surrogate: Tetrachloro-m-xylene	0.0174		mg/kg wet	0.02500		70	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0183		mg/kg wet	0.02500		73	30-150			

LCS Dup

Aroclor 1016	0.347	0.0500	mg/kg wet	0.5000		69	40-140	7	30	
Aroclor 1260	0.394	0.0500	mg/kg wet	0.5000		79	40-140	7	30	
Surrogate: Decachlorobiphenyl	0.0180		mg/kg wet	0.02500		72	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0188		mg/kg wet	0.02500		75	30-150			
Surrogate: Tetrachloro-m-xylene	0.0162		mg/kg wet	0.02500		65	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0172		mg/kg wet	0.02500		69	30-150			

8100M Total Petroleum Hydrocarbons

Batch CH60116 - 3546

Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	3.80		mg/kg wet	5.000		76	40-140			
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LCS

Decane (C10)	1.4	0.2	mg/kg wet	2.500		57	40-140			
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		87	40-140			



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8100M Total Petroleum Hydrocarbons

Batch CH60116 - 3546

Dodecane (C12)	1.7	0.2	mg/kg wet	2.500		67	40-140			
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Hexadecane (C16)	1.9	0.2	mg/kg wet	2.500		76	40-140			
Nonadecane (C19)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Nonane (C9)	1.2	0.2	mg/kg wet	2.500		48	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Octadecane (C18)	2.0	0.2	mg/kg wet	2.500		79	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Tetradecane (C14)	1.8	0.2	mg/kg wet	2.500		70	40-140			
Total Petroleum Hydrocarbons	26.9	37.5	mg/kg wet	35.00		77	40-140			
Triacotane (C30)	2.2	0.2	mg/kg wet	2.500		86	40-140			

<i>Surrogate: O-Terphenyl</i>	<i>4.01</i>		mg/kg wet	<i>5.000</i>		<i>80</i>	<i>40-140</i>			
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LCS Dup

Decane (C10)	1.7	0.2	mg/kg wet	2.500		67	40-140	16	25	
Docosane (C22)	2.0	0.2	mg/kg wet	2.500		81	40-140	6	25	
Dodecane (C12)	1.9	0.2	mg/kg wet	2.500		75	40-140	11	25	
Eicosane (C20)	2.0	0.2	mg/kg wet	2.500		81	40-140	3	25	
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500		82	40-140	5	25	
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500		80	40-140	5	25	
Nonadecane (C19)	2.0	0.2	mg/kg wet	2.500		82	40-140	2	25	
Nonane (C9)	1.5	0.2	mg/kg wet	2.500		58	30-140	20	25	
Octacosane (C28)	2.1	0.2	mg/kg wet	2.500		82	40-140	5	25	
Octadecane (C18)	2.0	0.2	mg/kg wet	2.500		79	40-140	0.3	25	
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		82	40-140	5	25	
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		78	40-140	11	25	
Total Petroleum Hydrocarbons	27.2	37.5	mg/kg wet	35.00		78	40-140	1	25	
Triacotane (C30)	2.1	0.2	mg/kg wet	2.500		82	40-140	5	25	

<i>Surrogate: O-Terphenyl</i>	<i>3.94</i>		mg/kg wet	<i>5.000</i>		<i>79</i>	<i>40-140</i>			
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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
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							
2,3,4,6-Tetrachlorophenol	ND	1.67	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							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

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-Nitroaniline	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							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	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	0.667	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							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	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							
Carbazole	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							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	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							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	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	1.91		mg/kg wet	3.333		57	30-130			
Surrogate: 2,4,6-Tribromophenol	3.40		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.06		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Fluorobiphenyl	1.93		mg/kg wet	3.333		58	30-130			
Surrogate: 2-Fluorophenol	3.08		mg/kg wet	5.000		62	30-130			
Surrogate: Nitrobenzene-d5	2.02		mg/kg wet	3.333		61	30-130			
Surrogate: Phenol-d6	3.18		mg/kg wet	5.000		64	30-130			
Surrogate: p-Terphenyl-d14	2.45		mg/kg wet	3.333		73	30-130			

LCS

1,1-Biphenyl	2.10	0.333	mg/kg wet	3.333		63	40-140			
1,2,4-Trichlorobenzene	2.11	0.333	mg/kg wet	3.333		63	40-140			
1,2-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140			
1,3-Dichlorobenzene	2.18	0.333	mg/kg wet	3.333		65	40-140			
1,4-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140			
2,3,4,6-Tetrachlorophenol	2.36	1.67	mg/kg wet	3.333		71	30-130			
2,4,5-Trichlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130			
2,4,6-Trichlorophenol	2.50	0.333	mg/kg wet	3.333		75	30-130			
2,4-Dichlorophenol	2.29	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dimethylphenol	2.25	0.333	mg/kg wet	3.333		68	30-130			
2,4-Dinitrophenol	1.84	1.67	mg/kg wet	3.333		55	30-130			
2,4-Dinitrotoluene	2.66	0.333	mg/kg wet	3.333		80	40-140			
2,6-Dinitrotoluene	2.44	0.333	mg/kg wet	3.333		73	40-140			
2-Chloronaphthalene	1.91	0.333	mg/kg wet	3.333		57	40-140			
2-Chlorophenol	2.14	0.333	mg/kg wet	3.333		64	30-130			
2-Methylnaphthalene	2.08	0.333	mg/kg wet	3.333		62	40-140			
2-Methylphenol	2.20	0.333	mg/kg wet	3.333		66	30-130			
2-Nitroaniline	2.16	0.333	mg/kg wet	3.333		65	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

2-Nitrophenol	2.30	0.333	mg/kg wet	3.333		69	30-130			
3,3'-Dichlorobenzidine	2.64	0.667	mg/kg wet	3.333		79	40-140			
3+4-Methylphenol	4.47	0.667	mg/kg wet	6.667		67	30-130			
3-Nitroaniline	2.37	0.333	mg/kg wet	3.333		71	40-140			
4,6-Dinitro-2-Methylphenol	2.20	1.67	mg/kg wet	3.333		66	30-130			
4-Bromophenyl-phenylether	2.50	0.333	mg/kg wet	3.333		75	40-140			
4-Chloro-3-Methylphenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
4-Chloroaniline	1.76	0.667	mg/kg wet	3.333		53	40-140			
4-Chloro-phenyl-phenyl ether	2.40	0.333	mg/kg wet	3.333		72	40-140			
4-Nitroaniline	2.96	0.333	mg/kg wet	3.333		89	40-140			
4-Nitrophenol	2.51	1.67	mg/kg wet	3.333		75	30-130			
Acenaphthene	2.22	0.333	mg/kg wet	3.333		66	40-140			
Acenaphthylene	2.16	0.333	mg/kg wet	3.333		65	40-140			
Acetophenone	2.12	0.667	mg/kg wet	3.333		63	40-140			
Aniline	1.70	0.667	mg/kg wet	3.333		51	40-140			
Anthracene	2.39	0.333	mg/kg wet	3.333		72	40-140			
Azobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140			
Benzo(a)anthracene	2.37	0.333	mg/kg wet	3.333		71	40-140			
Benzo(a)pyrene	2.54	0.167	mg/kg wet	3.333		76	40-140			
Benzo(b)fluoranthene	2.34	0.333	mg/kg wet	3.333		70	40-140			
Benzo(g,h,i)perylene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Benzo(k)fluoranthene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Benzoic Acid	2.16	1.67	mg/kg wet	3.333		65	40-140			
Benzyl Alcohol	2.16	0.333	mg/kg wet	3.333		65	40-140			
bis(2-Chloroethoxy)methane	2.08	0.333	mg/kg wet	3.333		62	40-140			
bis(2-Chloroethyl)ether	2.17	0.333	mg/kg wet	3.333		65	40-140			
bis(2-chloroisopropyl)Ether	2.05	0.333	mg/kg wet	3.333		61	40-140			
bis(2-Ethylhexyl)phthalate	2.38	0.333	mg/kg wet	3.333		71	40-140			
Butylbenzylphthalate	2.48	0.333	mg/kg wet	3.333		74	40-140			
Carbazole	2.50	0.333	mg/kg wet	3.333		75	40-140			
Chrysene	2.28	0.167	mg/kg wet	3.333		69	40-140			
Dibenzo(a,h)Anthracene	2.74	0.167	mg/kg wet	3.333		82	40-140			
Dibenzofuran	2.22	0.333	mg/kg wet	3.333		67	40-140			
Diethylphthalate	2.65	0.333	mg/kg wet	3.333		80	40-140			
Dimethylphthalate	2.55	0.333	mg/kg wet	3.333		77	40-140			
Di-n-butylphthalate	2.80	0.333	mg/kg wet	3.333		84	40-140			
Di-n-octylphthalate	2.06	0.333	mg/kg wet	3.333		62	40-140			
Fluoranthene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Fluorene	2.29	0.333	mg/kg wet	3.333		69	40-140			
Hexachlorobenzene	2.38	0.167	mg/kg wet	3.333		71	40-140			
Hexachlorobutadiene	2.03	0.333	mg/kg wet	3.333		61	40-140			
Hexachlorocyclopentadiene	1.53	1.67	mg/kg wet	3.333		46	40-140			
Hexachloroethane	1.98	0.333	mg/kg wet	3.333		60	40-140			
Indeno(1,2,3-cd)Pyrene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.09	0.333	mg/kg wet	3.333		63	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

Naphthalene	2.15	0.333	mg/kg wet	3.333		64	40-140			
Nitrobenzene	2.01	0.333	mg/kg wet	3.333		60	40-140			
N-Nitrosodimethylamine	2.15	0.333	mg/kg wet	3.333		64	40-140			
N-Nitroso-Di-n-Propylamine	2.23	0.333	mg/kg wet	3.333		67	40-140			
N-nitrosodiphenylamine	2.35	0.333	mg/kg wet	3.333		70	40-140			
Pentachlorophenol	2.40	1.67	mg/kg wet	3.333		72	30-130			
Phenanthrene	2.36	0.333	mg/kg wet	3.333		71	40-140			
Phenol	2.16	0.333	mg/kg wet	3.333		65	30-130			
Pyrene	2.30	0.333	mg/kg wet	3.333		69	40-140			
Pyridine	1.82	1.67	mg/kg wet	3.333		55	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.31		mg/kg wet	3.333		69	30-130			
Surrogate: 2,4,6-Tribromophenol	4.57		mg/kg wet	5.000		91	30-130			
Surrogate: 2-Chlorophenol-d4	3.89		mg/kg wet	5.000		78	30-130			
Surrogate: 2-Fluorobiphenyl	2.40		mg/kg wet	3.333		72	30-130			
Surrogate: 2-Fluorophenol	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: Nitrobenzene-d5	2.45		mg/kg wet	3.333		74	30-130			
Surrogate: Phenol-d6	3.96		mg/kg wet	5.000		79	30-130			
Surrogate: p-Terphenyl-d14	2.75		mg/kg wet	3.333		83	30-130			

LCS Dup

1,1-Biphenyl	2.36	0.333	mg/kg wet	3.333		71	40-140	12	30	
1,2,4-Trichlorobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140	10	30	
1,2-Dichlorobenzene	2.26	0.333	mg/kg wet	3.333		68	40-140	7	30	
1,3-Dichlorobenzene	2.23	0.333	mg/kg wet	3.333		67	40-140	2	30	
1,4-Dichlorobenzene	2.24	0.333	mg/kg wet	3.333		67	40-140	8	30	
2,3,4,6-Tetrachlorophenol	2.71	1.67	mg/kg wet	3.333		81	30-130	14	30	
2,4,5-Trichlorophenol	2.90	0.333	mg/kg wet	3.333		87	30-130	12	30	
2,4,6-Trichlorophenol	2.76	0.333	mg/kg wet	3.333		83	30-130	10	30	
2,4-Dichlorophenol	2.53	0.333	mg/kg wet	3.333		76	30-130	10	30	
2,4-Dimethylphenol	2.48	0.333	mg/kg wet	3.333		75	30-130	10	30	
2,4-Dinitrophenol	2.30	1.67	mg/kg wet	3.333		69	30-130	22	30	
2,4-Dinitrotoluene	3.16	0.333	mg/kg wet	3.333		95	40-140	17	30	
2,6-Dinitrotoluene	2.78	0.333	mg/kg wet	3.333		83	40-140	13	30	
2-Chloronaphthalene	2.16	0.333	mg/kg wet	3.333		65	40-140	12	30	
2-Chlorophenol	2.25	0.333	mg/kg wet	3.333		68	30-130	5	30	
2-Methylnaphthalene	2.30	0.333	mg/kg wet	3.333		69	40-140	10	30	
2-Methylphenol	2.32	0.333	mg/kg wet	3.333		70	30-130	5	30	
2-Nitroaniline	2.39	0.333	mg/kg wet	3.333		72	40-140	10	30	
2-Nitrophenol	2.54	0.333	mg/kg wet	3.333		76	30-130	10	30	
3,3'-Dichlorobenzidine	2.79	0.667	mg/kg wet	3.333		84	40-140	5	30	
3+4-Methylphenol	4.71	0.667	mg/kg wet	6.667		71	30-130	5	30	
3-Nitroaniline	2.68	0.333	mg/kg wet	3.333		80	40-140	12	30	
4,6-Dinitro-2-Methylphenol	2.51	1.67	mg/kg wet	3.333		75	30-130	13	30	
4-Bromophenyl-phenylether	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
4-Chloro-3-Methylphenol	2.63	0.333	mg/kg wet	3.333		79	30-130	11	30	
4-Chloroaniline	2.27	0.667	mg/kg wet	3.333		68	40-140	25	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

4-Chloro-phenyl-phenyl ether	2.66	0.333	mg/kg wet	3.333		80	40-140	10	30	
4-Nitroaniline	3.32	0.333	mg/kg wet	3.333		100	40-140	11	30	
4-Nitrophenol	2.86	1.67	mg/kg wet	3.333		86	30-130	13	30	
Acenaphthene	2.50	0.333	mg/kg wet	3.333		75	40-140	12	30	
Acenaphthylene	2.40	0.333	mg/kg wet	3.333		72	40-140	10	30	
Acetophenone	2.31	0.667	mg/kg wet	3.333		69	40-140	9	30	
Aniline	1.69	0.667	mg/kg wet	3.333		51	40-140	0.1	30	
Anthracene	2.57	0.333	mg/kg wet	3.333		77	40-140	7	30	
Azobenzene	2.48	0.333	mg/kg wet	3.333		74	40-140	6	30	
Benzo(a)anthracene	2.55	0.333	mg/kg wet	3.333		77	40-140	7	30	
Benzo(a)pyrene	2.70	0.167	mg/kg wet	3.333		81	40-140	6	30	
Benzo(b)fluoranthene	2.49	0.333	mg/kg wet	3.333		75	40-140	6	30	
Benzo(g,h,i)perylene	2.81	0.333	mg/kg wet	3.333		84	40-140	6	30	
Benzo(k)fluoranthene	2.83	0.333	mg/kg wet	3.333		85	40-140	10	30	
Benzoic Acid	2.62	1.67	mg/kg wet	3.333		79	40-140	19	30	
Benzyl Alcohol	2.36	0.333	mg/kg wet	3.333		71	40-140	9	30	
bis(2-Chloroethoxy)methane	2.33	0.333	mg/kg wet	3.333		70	40-140	11	30	
bis(2-Chloroethyl)ether	2.31	0.333	mg/kg wet	3.333		69	40-140	6	30	
bis(2-chloroisopropyl)Ether	2.23	0.333	mg/kg wet	3.333		67	40-140	8	30	
bis(2-Ethylhexyl)phthalate	2.56	0.333	mg/kg wet	3.333		77	40-140	7	30	
Butylbenzylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140	10	30	
Carbazole	2.70	0.333	mg/kg wet	3.333		81	40-140	8	30	
Chrysene	2.41	0.167	mg/kg wet	3.333		72	40-140	5	30	
Dibenzo(a,h)Anthracene	2.97	0.167	mg/kg wet	3.333		89	40-140	8	30	
Dibenzofuran	2.49	0.333	mg/kg wet	3.333		75	40-140	11	30	
Diethylphthalate	2.99	0.333	mg/kg wet	3.333		90	40-140	12	30	
Dimethylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140	11	30	
Di-n-butylphthalate	3.05	0.333	mg/kg wet	3.333		91	40-140	8	30	
Di-n-octylphthalate	2.24	0.333	mg/kg wet	3.333		67	40-140	8	30	
Fluoranthene	2.63	0.333	mg/kg wet	3.333		79	40-140	6	30	
Fluorene	2.57	0.333	mg/kg wet	3.333		77	40-140	12	30	
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140	5	30	
Hexachlorobutadiene	2.28	0.333	mg/kg wet	3.333		69	40-140	12	30	
Hexachlorocyclopentadiene	1.72	1.67	mg/kg wet	3.333		52	40-140	12	30	
Hexachloroethane	2.13	0.333	mg/kg wet	3.333		64	40-140	7	30	
Indeno(1,2,3-cd)Pyrene	2.92	0.333	mg/kg wet	3.333		88	40-140	6	30	
Isophorone	2.32	0.333	mg/kg wet	3.333		69	40-140	10	30	
Naphthalene	2.36	0.333	mg/kg wet	3.333		71	40-140	9	30	
Nitrobenzene	2.43	0.333	mg/kg wet	3.333		73	40-140	19	30	
N-Nitrosodimethylamine	2.23	0.333	mg/kg wet	3.333		67	40-140	4	30	
N-Nitroso-Di-n-Propylamine	2.41	0.333	mg/kg wet	3.333		72	40-140	8	30	
N-nitrosodiphenylamine	2.51	0.333	mg/kg wet	3.333		75	40-140	7	30	
Pentachlorophenol	2.69	1.67	mg/kg wet	3.333		81	30-130	12	30	
Phenanthrene	2.52	0.333	mg/kg wet	3.333		76	40-140	7	30	
Phenol	2.39	0.333	mg/kg wet	3.333		72	30-130	10	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH60115 - 3546

Pyrene	2.51	0.333	mg/kg wet	3.333		75	40-140	8	30	
Pyridine	1.87	1.67	mg/kg wet	3.333		56	40-140	2	30	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	2.37		mg/kg wet	3.333		71	30-130			
<i>Surrogate: 2,4,6-Tribromophenol</i>	4.72		mg/kg wet	5.000		94	30-130			
<i>Surrogate: 2-Chlorophenol-d4</i>	4.02		mg/kg wet	5.000		80	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.60		mg/kg wet	3.333		78	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.81		mg/kg wet	5.000		76	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.66		mg/kg wet	3.333		80	30-130			
<i>Surrogate: Phenol-d6</i>	4.09		mg/kg wet	5.000		82	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.88		mg/kg wet	3.333		86	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

Notes and Definitions

- Z-08 See Attached
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- ICV+ Initial Calibration Verification recovery is above upper control limit (ICV+).
- 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 below lower 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608049

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/water/dwp-services/labcert/documents/AllLabs.xls>

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

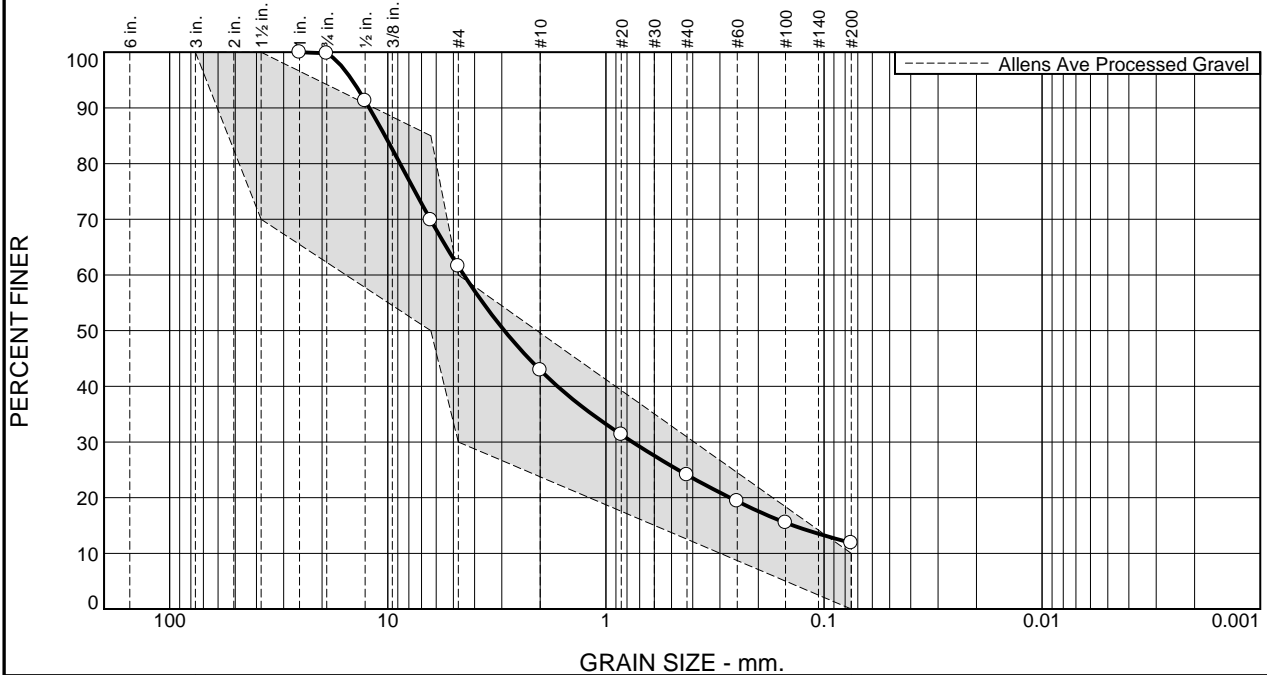
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	0.2	38.2	18.7	18.8	12.2	11.9

TEST RESULTS (D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1	100.0		
.75	99.8		
0.5	91.3		
0.25	69.8	50.0 - 85.0	
#4	61.6	30.0 - 60.0	X
#10	42.9		
#20	31.3		
#40	24.1		
#60	19.4		
#100	15.5		
#200	11.9	0.0 - 10.0	X

Material Description

Grey poorly graded sand with silt and gravel

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= SP-SM AASHTO (M 145)= A-1-a

Coefficients

D₉₀= 12.1539 D₈₅= 10.3014 D₆₀= 4.4783
D₅₀= 2.9191 D₃₀= 0.7549 D₁₅= 0.1384
D₁₀= C_u= C_c=

Remarks

Date Received: 8/3/2016 Date Tested: 8/5/2016

Tested By: RF

Checked By: Matthew Colman, P.E.

Title: Laboratory Manager

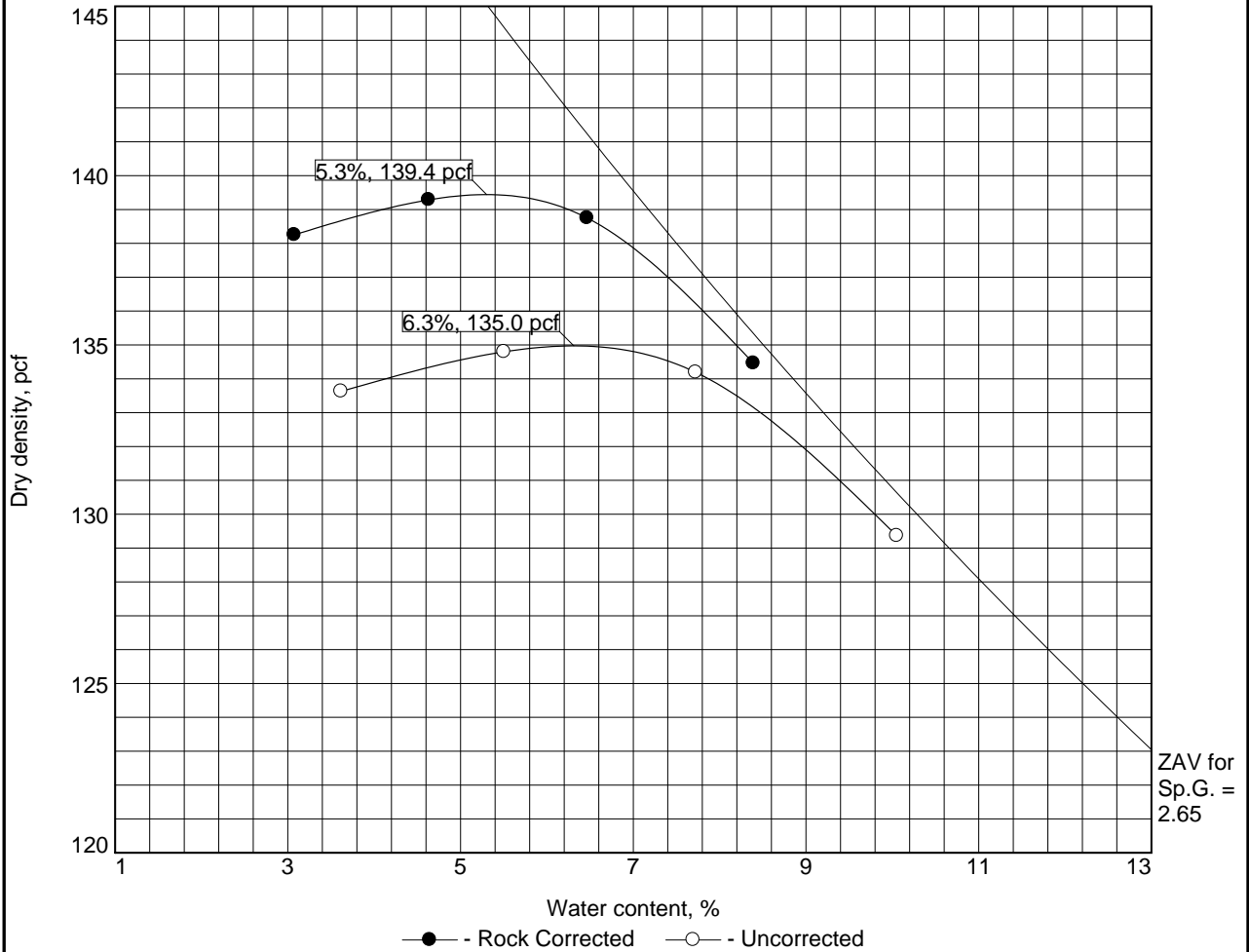
* Allens Ave Processed Gravel

Source of Sample: Import Depth: Stockpile
Sample Number: 3/4 DGA (Processed)

Date Sampled: 8/1/2016

Thielsch Engineering Inc.	Client: ESS/Charter Consulting Company
Cranston, RI	Project: Allens Ave
	Project No: 1608049
	Figure 1608049-03

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
Stockpile	SP-SM	A-1-a		2.65			17.4	11.9

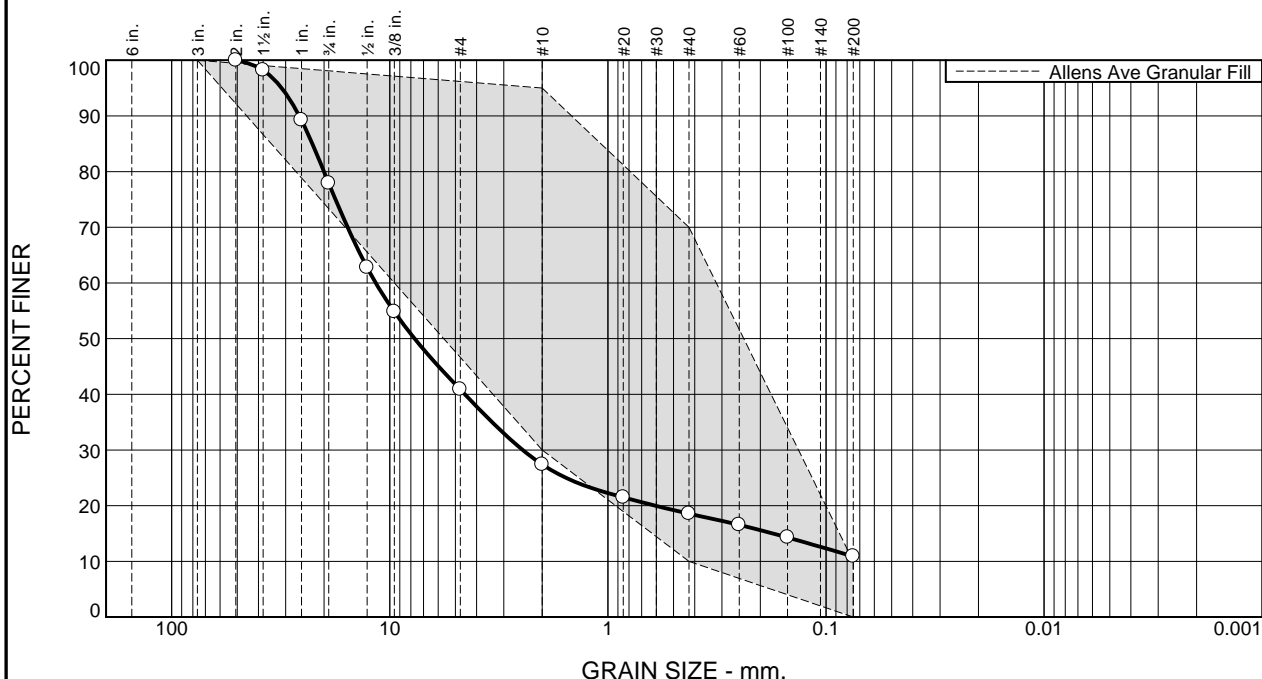
ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 139.4 pcf	135.0 pcf	Grey poorly graded sand with silt and gravel
Optimum moisture = 5.3 %	6.3 %	

Project No. 1608049 Client: ESS/Charter Consulting Company Project: Allens Ave <input type="radio"/> Source of Sample: Import Sample Number: 3/4 DGA (Processed)	Remarks: Unit weight of uncompactd material = 111 pcf.
Thielsch Engineering Inc. Cranston, RI	

Figure 1608049-03

Tested By: GG **Checked By:** Matthew Colman, P.E.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	22.1	37.0	13.5	8.8	7.7	10.9

TEST RESULTS (D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
2	100.0		
1.5	98.2		
1	89.2		
.75	77.9		
0.5	62.8		
.375	54.8		
#4	40.9		
#10	27.4	30.0 - 95.0	X
#20	21.5		
#40	18.6	10.0 - 70.0	
#60	16.6		
#100	14.3		
#200	10.9	0.0 - 10.0	X

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= GP-GM AASHTO (M 145)= A-1-a

Coefficients

D₉₀= 25.9886 D₈₅= 22.6477 D₆₀= 11.5904
D₅₀= 7.6921 D₃₀= 2.4574 D₁₅= 0.1750
D₁₀= C_u= C_c=

Remarks

Date Received: 8/3/2016 Date Tested: 8/5/2016

Tested By: RF

Checked By: Matthew Colman, P.E.

Title: Laboratory Manager

* Allens Ave Granular Fill

Source of Sample: Import Depth: Stockpile
Sample Number: 1.5" DGA (Granular)

Date Sampled: 8/1/2016

Thielsch Engineering Inc.

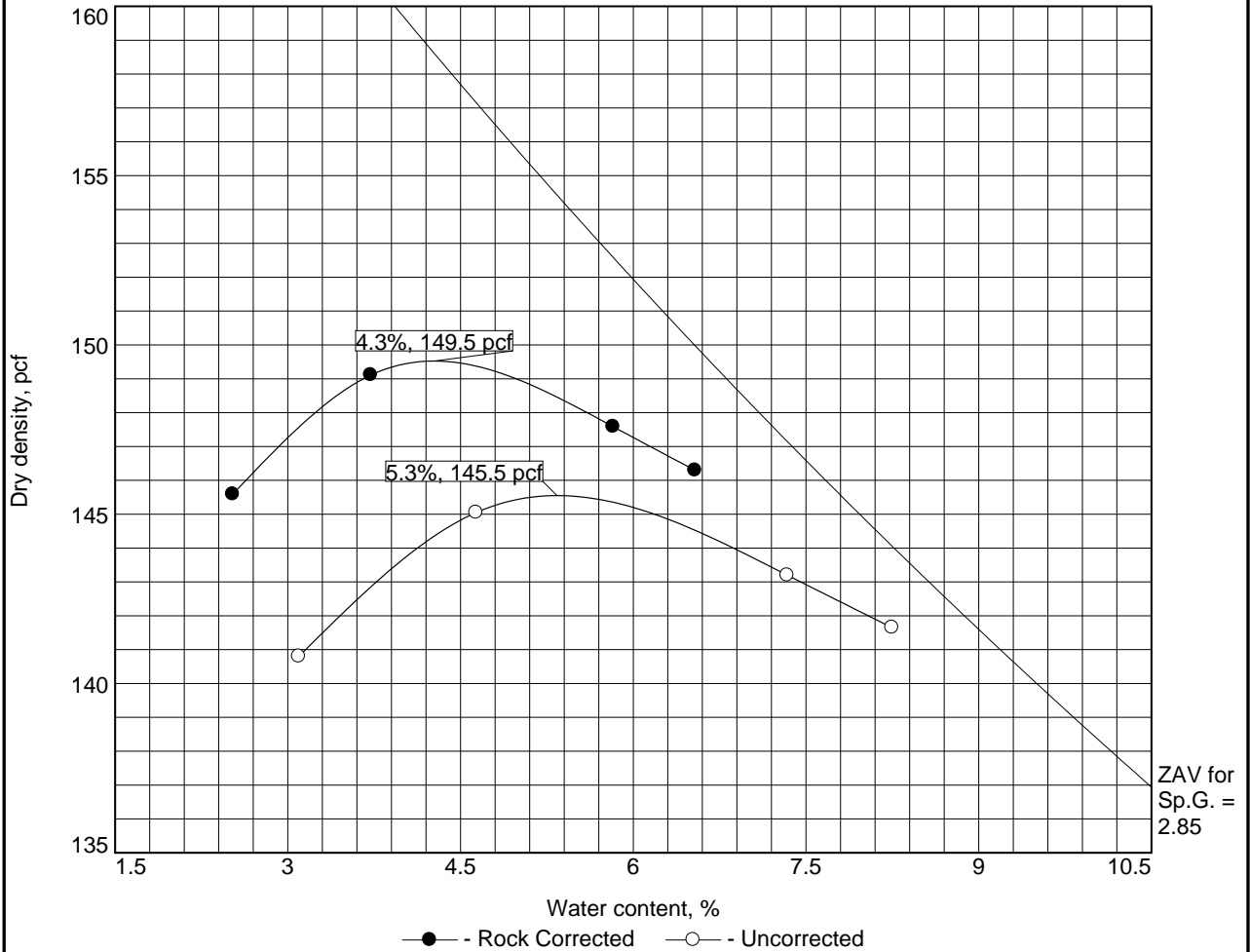
Client: ESS/Charter Consulting Company
Project: Allens Ave

Cranston, RI

Project No: 1608049

Figure 1608049-06

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method C Modified
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
Stockpile	GP-GM	A-1-a		2.65			22.1	10.9

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 149.5 pcf	145.5 pcf	Grey poorly graded gravel with silt and sand
Optimum moisture = 4.3 %	5.3 %	

Project No. 1608049 Client: ESS/Charter Consulting Company Project: Allens Ave	Remarks: Unit weight of uncompacted material = 116pcf
<input type="radio"/> Source of Sample: Import Sample Number: 1.5" DGA (Granular) Thielsch Engineering Inc. Cranston, RI	

Figure 1608049-06

Tested By: GG Checked By: Matthew Colman, P.E.

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Bedford, NH - GZA/CMT

ESS Project ID: 1608049

Date Received: 8/1/2016

Shipped/Delivered Via: ESS Courier

Project Due Date: 8/2/2016

Days for Project: 1 Day

- | | |
|---|---|
| <p>1. Air bill manifest present? <input checked="" type="checkbox"/> Yes
Air No.: <u>NA</u></p> <p>2. Were custody seals present? <input type="checkbox"/> No</p> <p>3. Is radiation count <100 CPM? <input type="checkbox"/> Yes</p> <p>4. Is a Cooler Present? <input type="checkbox"/> NA
Temp: <u>22.4</u> Iced with: <u>Yes none JC 8/1/16</u></p> <p>5. Was COC signed and dated by client? <input type="checkbox"/> Yes</p> | <p>6. Does COC match bottles? <input type="checkbox"/> Yes</p> <p>7. Is COC complete and correct? <input type="checkbox"/> Yes</p> <p>8. Were samples received intact? <input type="checkbox"/> Yes</p> <p>9. Were labs informed about short holds & rushes? <input checked="" type="checkbox"/> Yes / No / NA</p> <p>10. Were any analyses received outside of hold time? Yes <input checked="" type="checkbox"/> No</p> |
|---|---|

- | | |
|---|--|
| <p>11. Any Subcontracting needed? Yes / <input checked="" type="checkbox"/> No
ESS Sample IDs: _____
Analysis: _____
TAT: _____</p> | <p>12. Were VOAs received? <input checked="" type="checkbox"/> Yes / No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? <input checked="" type="checkbox"/> Yes / No / NA</p> |
|---|--|

13. Are the samples properly preserved? Yes / No
- a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
- b. Low Level VOAs brought to freezer: Date: 8/1/16 Time: 1430 By: JC

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	56660	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	56661	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	56662	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	56685	Yes	NA	Yes	VOA Vial - Other	other	
01	56686	Yes	NA	Yes	VOA Vial - Other	other	
01	56692	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	56665	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	56666	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	56683	Yes	NA	Yes	VOA Vial - Other	other	
02	56684	Yes	NA	Yes	VOA Vial - Other	other	
02	56691	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	56663	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	56664	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	56681	Yes	NA	Yes	VOA Vial - Other	other	
03	56682	Yes	NA	Yes	VOA Vial - Other	other	
03	56690	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	56667	Yes	NA	Yes	1L Amber - Unpres	NP	
04	56679	Yes	NA	Yes	VOA Vial - Other	other	
04	56680	Yes	NA	Yes	VOA Vial - Other	other	
04	56689	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
04	56693	Yes	NA	Yes	1L Amber - Unpres	NP	
05	56668	Yes	NA	Yes	1L Amber - Unpres	NP	
05	56669	Yes	NA	Yes	1L Amber - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: GZA - Bedford, NH - GZA/CMT

ESS Project ID: 1608049

Date Received: 8/1/2016

05	56670	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	56671	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	56672	Yes	NA	Yes	8 oz. Jar - Unpres	NP
05	56677	Yes	NA	Yes	VOA Vial - Other	other
05	56678	Yes	NA	Yes	VOA Vial - Other	other
05	56688	Yes	NA	Yes	VOA Vial - Methanol	MeOH
06	56673	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	56674	Yes	NA	Yes	8 oz. Jar - Unpres	NP
06	56675	Yes	NA	Yes	VOA Vial - Other	other
06	56676	Yes	NA	Yes	VOA Vial - Other	other
06	56687	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers?

Yes / No

Completed		Date & Time:	<u>8/1/16</u>	<u>1419</u>
By:	<u>[Signature]</u>			
Reviewed		Date & Time:	<u>8/1/16</u>	<u>14:20</u>
By:	<u>BSV</u>			
Delivered		Date & Time:	<u>8/1/16</u>	<u>1430</u>
By:	<u>[Signature]</u>			

ESS Laboratory

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

Turn Time 24 ^{AS} Standard Other 5 day
 Regulatory State: MA (R) CT NH NJ NY ME Other _____
 Is this project for any of the following: (please circle)
 MA-MCP Navy USACE CT DEP Other _____

Co. Name Charter Contracting Company
 Contact Person Ryle Merkowsky
 City Boston State MA
 Tel. (617) 879-8464 Zip 02118
 Project Name Alleys Ave
 Address 506 Harrison Ave Ste 4R
 email: KMERKOWSKY@CHARTER.US

ESS Lab # 1608049
 Reporting Limits - RIDEM RES DEC

Electronic Deliverables Excel Access PDF

ESS Lab ID	Date	Collection Time	Grab-G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Analysis	Vol of Container	Asaric	TPH	VDA LL	SVOA	PP13	PCBs/Pesticides	Grain Size 0422/C136	Material Classification	Modified Proctor	Moisture Content
1	8/1/16	11:00	C	Soil	3/4" Washed Stone						✓						X	X		
2	8/1/16	11:00	C	Soil	Washed Dust (C-33 Sand)						✓						X	X		
3	8/1/16	11:00	C	Soil	3/4 DGA (Processed Gravel)						✓						X	X		
4	8/1/16	11:00	C	Solid	2-4 Riprap						✓						X	X		
5	8/1/16	11:00	C	Solid	2" Stone						✓						X	X		
6	8/1/16	11:00	C	Soil	1.5" DGA (Granular Fill)						✓						X	X		

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid O-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Off W-Wipes F-Filter

Cooler Present Yes No
 Cooler Intact Yes No NA: []
 Cooler Temperature: []
 Internal Use Only []
 [] Pick up [] Technician

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-
 Sampled by: Ryan Miller
 Comments: If arsenic results below 7 mg/kg, run remaining tests.

Requested by: (Signature, Date & Time) [Signature] 8/1/16 11:45
 Received by: (Signature, Date & Time) [Signature]
 Relinquished by: (Signature, Date & Time) _____
 Relinquished by: (Signature, Date & Time) _____

Please fax to the laboratory all changes to Chain of Custody
 1 (White) Lab Copy
 2 (Yellow) Client Receipt

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA

ESS Laboratory

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

Turn Time 24 Standard Other _____

Regulatory State: MA (R) CT NH NJ NY ME Other _____

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other _____

Project # 2-1495 Project Name Alters Ave

Address 506 Harrison Ave Ste 4R

City Boston State MA Zip 02118 PO # _____

Tel. (617) 879-8464 email: KMERKESKY@charter.us

ESS Lab ID _____ Date _____ Collection Time _____

Matrix _____ Grab-G Composite-C _____

Soil _____ Sample ID _____

Pres Code _____ # of Containers _____

Type of Container _____ Vol of Container _____

Analysis _____

PCBs/Pesticides _____

PP13 _____

SVOA _____

VDA LL _____

TPH _____

Arsenic _____

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

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✓

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid O-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present Yes No Internal Use Only

Seals Intact Yes No NA: [] Pickup [] Technician

Cooler Temperature: _____

Received by: (Signature, Date & Time) [Signature] 8/1/16 11:45

Relinquished by: (Signature, Date & Time) [Signature] 8/1/16

Received by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Sampled by: Ryan Miller
 Comments: If arsenic results below 7 mg/kg, run remaining tests.

Please fax to the laboratory all changes to Chain of Custody

1 (White) Lab Copy
 2 (Yellow) Client Receipt



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1609347

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 12:12 pm, Sep 19, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1609347

SAMPLE RECEIPT

The following samples were received on September 16, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609347-01	1 1/2 DGA	Soil	6010C



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609347

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1609347

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
- 8015D - 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: Allens Ave
Client Sample ID: 1 1/2 DGA
Date Sampled: 09/16/16 07:00
Percent Solids: 98

ESS Laboratory Work Order: 1609347
ESS Laboratory Sample ID: 1609347-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	2.47 (2.46)		6010C		1	KJK	09/17/16 1:04	2.08	100	CI61607
Lead	ND (4.93)		6010C		1	KJK	09/17/16 1:04	2.08	100	CI61607



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609347

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

Total Metals

Batch CI61607 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							

Blank

Arsenic	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							

LCS

Arsenic	150	9.62	mg/kg wet	161.0		93	80-120			
Lead	135	19.2	mg/kg wet	138.0		98	80-120			

LCS Dup

Arsenic	156	8.93	mg/kg wet	161.0		97	80-120	4	20	
Lead	142	17.9	mg/kg wet	138.0		103	80-120	5	20	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609347

Notes and Definitions

- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609347

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/CMT

ESS Project ID: 1609347
 Date Received: 9/16/2016
 Project Due Date: 9/19/2016
 Days for Project: 1 Day

Shipped/Delivered Via: Client

- | | |
|---|---|
| 1. Air bill manifest present? <input type="checkbox"/> No
Air No.: <u>NA</u>

2. Were custody seals present? <input type="checkbox"/> No

3. Is radiation count <100 CPM? <input type="checkbox"/> Yes

4. Is a Cooler Present? <input type="checkbox"/> No
Temp: <u>18.5</u> Iced with: <u>None</u>

5. Was COC signed and dated by client? <input type="checkbox"/> Yes | 6. Does COC match bottles? <input type="checkbox"/> Yes

7. Is COC complete and correct? <input type="checkbox"/> Yes

8. Were samples received intact? <input type="checkbox"/> Yes

9. Were labs informed about <u>short holds & rushes</u> ? <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No / NA

10. Were any analyses received outside of hold time? Yes / <input checked="" type="checkbox"/> No |
|---|---|

- | | |
|---|---|
| 11. Any Subcontracting needed? Yes / <input checked="" type="checkbox"/> No
ESS Sample IDs: _____
Analysis: _____
TAT: _____ | 12. Were VOAs received? Yes / <input checked="" type="checkbox"/> 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 VOAs brought to freezer: 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	67702	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	67703	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	67704	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

2nd Review
 Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 9/16/16 1016

Reviewed By: m-msid Date & Time: 9/16/16 1123

Delivered By: [Signature] Date & Time: 9/16/16 1210

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

Co. Name

CHARTER CONTRACTING CO

Contact Person

RYAN MILLER

City

BOSTON

Tel. (617) 827-8664

Fax

State

MA

Grab-G Composite-C

C

Collection Time

9/16/16 0700

Date

9/16/16 0700

Matrix

S

Sample ID

1 1/2 DGA

Pres Code

3 AG

of Containers

3

Type of Container

AG

Vol of Container

Analysis

AsSEniC

LEAD

X

X

CHAIN OF CUSTODY

Turn Time 24 Standard Other

Regulatory State: MA (R) CT NH NJ NY ME Other

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CTDEP Other

Project #

2-1495

Project Name

ALLENS AVE CAPPING

Address

500 HARRISON AVE STE 4R

City

State

Zip

02118

email:

R.MILLER@CHARTER.US

ESS Lab #

1609347

Reporting Limits -

Electronic Deliverables

Excel Access PDF

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter
 Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA
 Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-

Cooler Present Yes No
 Seals Intact Yes No
 Cooler Temperature: 18.5°C No Cooler

Internal Use Only
 Pickup
 Technician

Sampled by: RYAN MILLER
 Comments: SAMPLES JUST TAKEN

Relinquished by: (Signature, Date & Time)
 Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)
 Received by: (Signature, Date & Time)

1 (White) Lab Copy
 2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1609561

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 10:12 am, Sep 28, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1609561

SAMPLE RECEIPT

The following samples were received on September 26, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609561-01	3/4" Processed Gravel	Soil	6010C
1609561-02	Lopes - 1:1 (Loam: Comp)	Soil	D2974-87
1609561-03	Lopes - 2:1 (Loam: Comp)	Soil	D2974-87
1609561-04	Lopes - High Org	Soil	D2974-87



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609561

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1609561

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
- 8015D - 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: Allens Ave
Client Sample ID: 3/4" Processed Gravel
Date Sampled: 09/26/16 13:00
Percent Solids: 98

ESS Laboratory Work Order: 1609561
ESS Laboratory Sample ID: 1609561-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (2.34)		6010C		1	KJK	09/27/16 20:33	2.18	100	CI62606
Lead	ND (4.69)		6010C		1	NAR	09/27/16 1:01	2.18	100	CI62606



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609561

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

Total Metals

Batch C162606 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							

Blank

Lead	ND	5.00	mg/kg wet							
------	----	------	-----------	--	--	--	--	--	--	--

LCS

Arsenic	150	9.09	mg/kg wet	161.0		93	80-120			
Lead	139	18.2	mg/kg wet	138.0		100	80-120			

LCS Dup

Arsenic	153	9.09	mg/kg wet	161.0		95	80-120	2	20	
Lead	141	18.2	mg/kg wet	138.0		103	80-120	2	20	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609561

Notes and Definitions

- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609561

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/CMT

ESS Project ID: 1609561
 Date Received: 9/26/2016
 Project Due Date: 9/27/2016
 Days for Project: 1 Day

Shipped/Delivered Via: _____ Client _____

- | | |
|--|--|
| 1. Air bill manifest present? <input type="checkbox"/> No
Air No.: _____ NA _____

2. Were custody seals present? <input type="checkbox"/> No

3. Is radiation count <100 CPM? <input type="checkbox"/> Yes

4. Is a Cooler Present? <input type="checkbox"/> No
Temp: <u>21.3</u> Iced with: <u>None</u>

5. Was COC signed and dated by client? <input type="checkbox"/> Yes | 6. Does COC match bottles? <input type="checkbox"/> Yes

7. Is COC complete and correct? <input type="checkbox"/> Yes

8. Were samples received intact? <input type="checkbox"/> Yes

9. Were labs informed about <u>short holds & rushes</u> ? <input checked="" type="checkbox"/> Yes / No / NA

10. Were any analyses received outside of hold time? Yes / <input checked="" type="checkbox"/> No |
|--|--|

- | | |
|---|---|
| 11. Any Subcontracting needed? <input checked="" type="checkbox"/> Yes / No
ESS Sample IDs: <u>02-04</u>
Analysis: <u>organic</u>
TAT: <u>24hr</u> | 12. Were VOAs received? Yes / <input checked="" type="checkbox"/> No
a. Air bubbles in aqueous VOAs? Yes / No
b. Does methanol cover soil completely? Yes / No / <input checked="" type="checkbox"/> 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	69900	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	69901	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	69902	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	69903	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	69906	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	69905	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
04	69904	Yes	NA	Yes	8 oz. Jar - Unpres	NP	

2nd Review
 Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 9/26/16 1445
 Reviewed By: [Signature] Date & Time: 9/26/16 1452
 Delivered By: [Signature] Date & Time: 9/26/16 1452

ESS Laboratory

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

Turn Time 24 Standard Other _____

Regulatory State: MA (R) CT NH NJ NY ME Other _____

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other _____

Project # 2-1495 Project Name Allen's Ave Capping

Address 500 Harrison Ave Ste 410

City Boston State MA ZIP 02118

Tel. (617) 827-8664 Fax _____

Contact Person Ryan Miller

email: RMiller@thielsch.com

PO # _____

ESS Lab ID _____ Date _____ Collection Time _____

Matrix _____ Grab -G Composite-C _____

Sample ID _____ Pres Code _____ # of Containers _____

Vol of Container _____ Type of Container _____

Analysis _____

ARSenic

LEAD

ORGANICS

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile VVOA

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Ascorbic Acid, 8-ZnAct, 9- _____

Cooler Present Yes No

Seals Intact Yes No NA: X

Cooler Temperature: 21.3° W No ICE

Requested by: (Signature, Date & Time) Ryan Miller 9/26 2:40 PM

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Internal Use Only

Sampled by: Ryan Miller

Comments:

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

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Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Requested by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____

Please fax to the laboratory all changes to Chain of Custody

1 (White) Lab Copy

2 (Yellow) Client Receipt



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1609568

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 10:12 am, Sep 28, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1609568

SAMPLE RECEIPT

The following samples were received on September 26, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609568-01	1.5" DGA	Soil	6010C



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609568

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1609568

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
- 8015D - 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: Allens Ave
Client Sample ID: 1.5" DGA
Date Sampled: 09/26/16 15:10
Percent Solids: 96

ESS Laboratory Work Order: 1609568
ESS Laboratory Sample ID: 1609568-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (2.16)		6010C		1	KJK	09/27/16 20:37	2.4	100	CI62606
Lead	ND (4.32)		6010C		1	NAR	09/27/16 1:05	2.4	100	CI62606



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609568

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

Total Metals

Batch C162606 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							

Blank

Lead	ND	5.00	mg/kg wet							
------	----	------	-----------	--	--	--	--	--	--	--

LCS

Arsenic	150	9.09	mg/kg wet	161.0		93	80-120			
Lead	139	18.2	mg/kg wet	138.0		100	80-120			

LCS Dup

Arsenic	153	9.09	mg/kg wet	161.0		95	80-120	2	20	
Lead	141	18.2	mg/kg wet	138.0		103	80-120	2	20	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609568

Notes and Definitions

- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609568

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory

Division of Thielsch Engineering, Inc.

185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (401) 461-4486

www.esslaboratory.com

Co. Name
Charter Contracting Co.

Contact Person
Ryan M. Ily

City
Boston MA

Tel. (617) 827-8664

State
MA

Fax.

Grab-G Composite-C
C

Collection Time
15:10

Matrix
S

Sample ID
1.5" DGA

Pres Code
4

of Containers
AG

Type of Container
Y

Vol of Container
Y

Analysis
Arsenic
Lead

CHAIN OF CUSTODY

Turn Time 24 Standard Other

Regulatory State: MA (R) CT NH NJ NY ME Other

Is this project for any of the following: (please circle)

MA-MCP Navy USACE CT DEP Other

Project # 2-1495

Project Name

Address 500 Harrison Ave Ste 418

City PO #

Zip 02118

email: Rmiller@charter-us

Sample ID

Pres Code

of Containers

Type of Container

Vol of Container

Analysis

ESS Lab # 1609568

Reporting Limits -

Electronic Deliverables Excel Access PDF

Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAc2, 9-

Sampled by: Ryan M. Ily

Comments:

Relinquished by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

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Relinquished by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Received by: (Signature, Date & Time)
9/26/16 15:30
Received by: (Signature, Date & Time)
9/26/16 15:30
Received by: (Signature, Date & Time)

1 (White) Lab Copy
2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1610369

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 10:02 am, Oct 24, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1610369

SAMPLE RECEIPT

The following samples were received on October 18, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1610369-01	3/4" Processed Gravel	Soil	6020A, 7010



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1610369

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1610369

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: Allens Ave
Client Sample ID: 3/4" Processed Gravel
Date Sampled: 10/18/16 13:00
Percent Solids: 94

ESS Laboratory Work Order: 1610369
ESS Laboratory Sample ID: 1610369-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	ND (1.27)		7010		5	KJK	10/21/16 17:21	2.09	100	CJ61915
Lead	6.87 (0.51)		6020A		20	NAR	10/19/16 20:07	2.09	100	CJ61915



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1610369

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CJ61915 - 3050B										
Blank										
Arsenic	ND	0.25	mg/kg wet							
Lead	ND	0.50	mg/kg wet							
LCS										
Arsenic	158	24.5	mg/kg wet	161.0		98	80-120			
Lead	141	24.5	mg/kg wet	138.0		102	80-120			
LCS Dup										
Arsenic	155	25.0	mg/kg wet	161.0		96	80-120	2	20	
Lead	141	25.0	mg/kg wet	138.0		102	80-120	0.07	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1610369

Notes and Definitions

- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1610369

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095




CERTIFICATE OF ANALYSIS

Kyle Merkosky
 Charter Contracting Company
 500 Harris Ave, Suite 4R
 Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1609407

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 3:30 pm, Sep 22, 2016

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 NELAC Standards, A2LA 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, Modified Proctor, Moisture Content, Soil Classification



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

SAMPLE RECEIPT

The following samples were received on September 20, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

Low Level VOA vials were frozen by ESS Laboratory on September 20, 2016 at 10:50.

Samples for VOA analysis were preserved at the laboratory.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609407-01	Lopes Topsoil	Soil	§, 6010C, 6020A, 7471B, 8081B, 8082A, 8100M, 8260B Low, 8270D



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CI62017-BS1 [Blank Spike recovery is above upper control limit \(B+\).](#)

1,4-Dioxane (135% @ 70-130%)

CI62017-BSD1 [Blank Spike recovery is above upper control limit \(B+\).](#)

1,4-Dioxane (142% @ 70-130%)

CZI0252-CCV1 [Continuing Calibration %Diff/Drift is below control limit \(CD-\).](#)

1,2-Dibromo-3-Chloropropane (31% @ 30%)

8081B Organochlorine Pesticides

CZI0283-CCV2 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Decachlorobiphenyl (25% @ 20%), Decachlorobiphenyl [2C] (26% @ 20%)

CZI0283-CCV4 [Continuing Calibration %Diff/Drift is above control limit \(CD+\).](#)

Decachlorobiphenyl (22% @ 20%)

8270D Semi-Volatile Organic Compounds

CZI0254-CCV1 [Calibration required quadratic regression \(Q\).](#)

2,4-Dinitrophenol (107% @ 80-120%), Benzoic Acid (90% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1609407

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
- 8015D - 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: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.45)		6020A		20	NAR	09/20/16 22:27	2.29	100	CI62016
Arsenic	3.46 (2.27)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Beryllium	0.31 (0.10)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Cadmium	ND (0.45)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Chromium	5.96 (0.91)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Copper	7.40 (2.27)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Lead	17.1 (4.55)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Mercury	0.075 (0.032)		7471B		1	BJV	09/21/16 13:34	0.64	40	CI62015
Nickel	4.68 (2.27)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Selenium	ND (0.45)		6020A		20	NAR	09/20/16 22:27	2.29	100	CI62016
Silver	ND (0.45)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016
Thallium	ND (0.45)		6020A		20	NAR	09/20/16 22:27	2.29	100	CI62016
Zinc	28.0 (2.27)		6010C		1	KJK	09/20/16 21:24	2.29	100	CI62016



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,1,1-Trichloroethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,1,2,2-Tetrachloroethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,1,2-Trichloroethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,1-Dichloroethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,1-Dichloroethene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,1-Dichloropropene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2,3-Trichlorobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2,3-Trichloropropane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2,4-Trichlorobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2,4-Trimethylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2-Dibromo-3-Chloropropane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2-Dibromoethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2-Dichlorobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2-Dichloroethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,2-Dichloropropane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,3,5-Trimethylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,3-Dichlorobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,3-Dichloropropane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,4-Dichlorobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1,4-Dioxane	ND (0.0914)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
1-Chlorohexane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
2,2-Dichloropropane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
2-Butanone	ND (0.0457)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
2-Chlorotoluene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
2-Hexanone	ND (0.0457)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
4-Chlorotoluene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
4-Isopropyltoluene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
4-Methyl-2-Pentanone	ND (0.0457)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Acetone	ND (0.0457)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Benzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Bromobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Bromodichloromethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Bromoform	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Bromomethane	ND (0.0091)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Carbon Disulfide	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Carbon Tetrachloride	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Chlorobenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Chloroethane	ND (0.0091)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Chloroform	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Chloromethane	ND (0.0091)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
cis-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
cis-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Dibromochloromethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Dibromomethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Dichlorodifluoromethane	ND (0.0091)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Diethyl Ether	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Di-isopropyl ether	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Ethyl tertiary-butyl ether	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Ethylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Hexachlorobutadiene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Isopropylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Methyl tert-Butyl Ether	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Methylene Chloride	ND (0.0228)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Naphthalene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
n-Butylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
n-Propylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
sec-Butylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Styrene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
tert-Butylbenzene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Tertiary-amyl methyl ether	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Tetrachloroethene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Tetrahydrofuran	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 5.7
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
trans-1,2-Dichloroethene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
trans-1,3-Dichloropropene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Trichloroethene	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Trichlorofluoromethane	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Vinyl Acetate	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Vinyl Chloride	ND (0.0091)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Xylene O	ND (0.0046)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Xylene P,M	ND (0.0091)		8260B Low		1	09/20/16 15:49	CZI0252	CI62017
Xylenes (Total)	ND (0.0091)		8260B Low		1	09/20/16 15:49		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>104 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>90 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 9/22/16 10:20

8081B Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
4,4'-DDE	0.0080 (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
4,4'-DDT	0.0091 (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Aldrin	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
alpha-BHC	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
alpha-Chlordane	0.0029 (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
alpha-Chlordane [2C]	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
beta-BHC	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Chlordane (Total)	ND (0.0319)		8081B		1	09/22/16 12:55	CZI0283	CI62221
delta-BHC	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Dieldrin	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Endosulfan I	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Endosulfan II	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Endosulfan Sulfate	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Endrin	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Endrin Aldehyde	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Endrin Ketone	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	09/22/16 12:55	CZI0283	CI62221
gamma-Chlordane	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Heptachlor	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Heptachlor Epoxide	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Hexachlorobenzene	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Methoxychlor	ND (0.0027)		8081B		1	09/22/16 12:55	CZI0283	CI62221
Toxaphene	ND (0.133)		8081B		1	09/22/16 12:55	CZI0283	CI62221

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	76 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	74 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	58 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	62 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 20.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 9/20/16 15:28

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1221	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1232	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1242	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1248	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1254	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1260	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1262	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003
Aroclor 1268	ND (0.0513)		8082A		1	09/21/16 22:32		CI62003

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	<i>81 %</i>		<i>30-150</i>
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>94 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>83 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>91 %</i>		<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 9/20/16 11:35

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	42.5 (39.7)		8100M		1	09/20/16 20:57	CZI0261	CI61916

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: O-Terphenyl</i>	92 %		40-140



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 9/20/16 11:35

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
1,2,4-Trichlorobenzene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
1,2-Dichlorobenzene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
1,3-Dichlorobenzene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
1,4-Dichlorobenzene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,3,4,6-Tetrachlorophenol	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,4,5-Trichlorophenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,4,6-Trichlorophenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,4-Dichlorophenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,4-Dimethylphenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,4-Dinitrophenol	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,4-Dinitrotoluene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2,6-Dinitrotoluene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2-Chloronaphthalene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2-Chlorophenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2-Methylnaphthalene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2-Methylphenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2-Nitroaniline	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
2-Nitrophenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
3,3'-Dichlorobenzidine	ND (0.681)		8270D		1	09/20/16 18:45	CZI0254	CI62009
3+4-Methylphenol	ND (0.681)		8270D		1	09/20/16 18:45	CZI0254	CI62009
3-Nitroaniline	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4,6-Dinitro-2-Methylphenol	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4-Bromophenyl-phenylether	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4-Chloro-3-Methylphenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4-Chloroaniline	ND (0.681)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4-Chloro-phenyl-phenyl ether	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4-Nitroaniline	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
4-Nitrophenol	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Acenaphthene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Acenaphthylene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Acetophenone	ND (0.681)		8270D		1	09/20/16 18:45	CZI0254	CI62009



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00
Percent Solids: 96
Initial Volume: 15.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 9/20/16 11:35

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.681)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Anthracene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Azobenzene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzo(a)anthracene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzo(a)pyrene	ND (0.171)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzo(b)fluoranthene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzo(g,h,i)perylene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzo(k)fluoranthene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzoic Acid	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Benzyl Alcohol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
bis(2-Chloroethoxy)methane	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
bis(2-Chloroethyl)ether	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
bis(2-chloroisopropyl)Ether	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
bis(2-Ethylhexyl)phthalate	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Butylbenzylphthalate	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Carbazole	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Chrysene	ND (0.171)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Dibenzo(a,h)Anthracene	ND (0.171)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Dibenzofuran	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Diethylphthalate	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Dimethylphthalate	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Di-n-butylphthalate	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Di-n-octylphthalate	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Fluoranthene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Fluorene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Hexachlorobenzene	ND (0.171)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Hexachlorobutadiene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Hexachlorocyclopentadiene	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Hexachloroethane	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Indeno(1,2,3-cd)Pyrene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Isophorone	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Naphthalene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: Lopes Topsoil
 Date Sampled: 09/19/16 07:00
 Percent Solids: 96
 Initial Volume: 15.3
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1609407
 ESS Laboratory Sample ID: 1609407-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 9/20/16 11:35

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
N-Nitrosodimethylamine	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
N-Nitroso-Di-n-Propylamine	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
N-nitrosodiphenylamine	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Pentachlorophenol	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Phenanthrene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Phenol	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Pyrene	ND (0.340)		8270D		1	09/20/16 18:45	CZI0254	CI62009
Pyridine	ND (1.71)		8270D		1	09/20/16 18:45	CZI0254	CI62009

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	55 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	71 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	56 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	60 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	55 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	56 %		30-130
<i>Surrogate: Phenol-d6</i>	58 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	79 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Lopes Topsoil
Date Sampled: 09/19/16 07:00

ESS Laboratory Work Order: 1609407
ESS Laboratory Sample ID: 1609407-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Grain Size	See Attached (N/A)								
Modified Proctor	See Attached (N/A)								
Moisture Content	See Attached (1.0)								
Soil Classification	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CI62015 - 7471B

Blank

Mercury	ND	0.033	mg/kg wet							
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LCS

Mercury	16.3	1.94	mg/kg wet	15.90		102	80-120			
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LCS Dup

Mercury	17.0	1.87	mg/kg wet	15.90		107	80-120	4	20	
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Batch CI62016 - 3050B

Blank

Antimony	ND	0.50	mg/kg wet							
Arsenic	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							
Copper	ND	2.50	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							
Zinc	ND	2.50	mg/kg wet							

LCS

Antimony	131	24.0	mg/kg wet	100.0		131	19-257			
Arsenic	146	9.62	mg/kg wet	161.0		91	80-120			
Beryllium	82.6	0.42	mg/kg wet	89.40		92	80-120			
Cadmium	184	1.92	mg/kg wet	190.0		97	80-120			
Chromium	78.8	3.85	mg/kg wet	87.90		90	80-120			
Copper	250	9.62	mg/kg wet	258.0		97	80-120			
Lead	134	19.2	mg/kg wet	138.0		97	80-120			
Nickel	125	9.62	mg/kg wet	127.0		99	80-120			
Selenium	314	24.0	mg/kg wet	305.0		103	80-120			
Silver	57.0	1.92	mg/kg wet	58.00		98	80-120			
Thallium	85.0	24.0	mg/kg wet	89.80		95	80-120			
Zinc	159	9.62	mg/kg wet	173.0		92	80-120			

LCS Dup

Antimony	147	24.0	mg/kg wet	100.0		147	19-257	11	30	
Arsenic	147	9.62	mg/kg wet	161.0		91	80-120	0.7	20	
Beryllium	83.0	0.42	mg/kg wet	89.40		93	80-120	0.5	20	
Cadmium	183	1.92	mg/kg wet	190.0		96	80-120	0.5	20	
Chromium	78.6	3.85	mg/kg wet	87.90		89	80-120	0.2	20	
Copper	249	9.62	mg/kg wet	258.0		96	80-120	0.5	20	
Lead	133	19.2	mg/kg wet	138.0		96	80-120	1	20	
Nickel	124	9.62	mg/kg wet	127.0		98	80-120	1	20	
Selenium	346	24.0	mg/kg wet	305.0		114	80-120	10	30	
Silver	56.8	1.92	mg/kg wet	58.00		98	80-120	0.5	20	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CI62016 - 3050B

Thallium	94.0	24.0	mg/kg wet	89.80		105	80-120	10	30	
Zinc	159	9.62	mg/kg wet	173.0		92	80-120	0.03	20	

5035/8260B Volatile Organic Compounds / Low Level

Batch CI62017 - 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	0.0050	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							
1-Chlorohexane	ND	0.0050	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0500	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0500	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet							
Acetone	ND	0.0500	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch C162017 - 5035

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	0.0050	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	0.0250	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 Acetate	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	0.0478		mg/kg wet	0.05000		96	70-130			
Surrogate: 4-Bromofluorobenzene	0.0463		mg/kg wet	0.05000		93	70-130			
Surrogate: Dibromofluoromethane	0.0487		mg/kg wet	0.05000		97	70-130			
Surrogate: Toluene-d8	0.0445		mg/kg wet	0.05000		89	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,1,1-Trichloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,2,2-Tetrachloroethane	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,2-Trichloroethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,1-Dichloroethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch C162017 - 5035

1,1-Dichloroethene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,2,3-Trichlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,2,3-Trichloropropane	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,2,4-Trichlorobenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
1,2,4-Trimethylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dibromo-3-Chloropropane	0.0396	0.0050	mg/kg wet	0.05000		79	70-130			
1,2-Dibromoethane	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
1,2-Dichlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloroethane	0.0553	0.0050	mg/kg wet	0.05000		111	70-130			
1,2-Dichloropropane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,3,5-Trimethylbenzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
1,3-Dichlorobenzene	0.0487	0.0050	mg/kg wet	0.05000		97	70-130			
1,3-Dichloropropane	0.0524	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
1,4-Dioxane	1.35	0.100	mg/kg wet	1.000		135	70-130			B+
1-Chlorohexane	0.0445	0.0050	mg/kg wet	0.05000		89	70-130			
2,2-Dichloropropane	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
2-Butanone	0.266	0.0500	mg/kg wet	0.2500		107	70-130			
2-Chlorotoluene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
2-Hexanone	0.251	0.0500	mg/kg wet	0.2500		100	70-130			
4-Chlorotoluene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
4-Isopropyltoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
4-Methyl-2-Pentanone	0.255	0.0500	mg/kg wet	0.2500		102	70-130			
Acetone	0.257	0.0500	mg/kg wet	0.2500		103	70-130			
Benzene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Bromobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Bromochloromethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Bromodichloromethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130			
Bromoform	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
Bromomethane	0.0570	0.0100	mg/kg wet	0.05000		114	70-130			
Carbon Disulfide	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
Carbon Tetrachloride	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Chlorobenzene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
Chloroethane	0.0392	0.0100	mg/kg wet	0.05000		78	70-130			
Chloroform	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
Chloromethane	0.0558	0.0100	mg/kg wet	0.05000		112	70-130			
cis-1,2-Dichloroethene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130			
cis-1,3-Dichloropropene	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Dibromochloromethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Dibromomethane	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Dichlorodifluoromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130			
Diethyl Ether	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Di-isopropyl ether	0.0479	0.0050	mg/kg wet	0.05000		96	70-130			
Ethyl tertiary-butyl ether	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch C162017 - 5035

Ethylbenzene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Hexachlorobutadiene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Isopropylbenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
Methyl tert-Butyl Ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
Methylene Chloride	0.0488	0.0250	mg/kg wet	0.05000		98	70-130			
Naphthalene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
n-Butylbenzene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
n-Propylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
sec-Butylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
Styrene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
tert-Butylbenzene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130			
Tertiary-amyl methyl ether	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Tetrachloroethene	0.0414	0.0050	mg/kg wet	0.05000		83	70-130			
Tetrahydrofuran	0.0427	0.0050	mg/kg wet	0.05000		85	70-130			
Toluene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
trans-1,2-Dichloroethene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,3-Dichloropropene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Trichloroethene	0.0477	0.0050	mg/kg wet	0.05000		95	70-130			
Trichlorofluoromethane	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Vinyl Acetate	0.0428	0.0050	mg/kg wet	0.05000		86	70-130			
Vinyl Chloride	0.0548	0.0100	mg/kg wet	0.05000		110	70-130			
Xylene O	0.0485	0.0050	mg/kg wet	0.05000		97	70-130			
Xylene P,M	0.0958	0.0100	mg/kg wet	0.1000		96	70-130			
Xylenes (Total)	0.144	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0523		mg/kg wet	0.05000		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.0470		mg/kg wet	0.05000		94	70-130			
Surrogate: Dibromofluoromethane	0.0515		mg/kg wet	0.05000		103	70-130			
Surrogate: Toluene-d8	0.0476		mg/kg wet	0.05000		95	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
1,1,1-Trichloroethane	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
1,1,2,2-Tetrachloroethane	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
1,1,2-Trichloroethane	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,1-Dichloroethane	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	5	25	
1,1-Dichloroethene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130	7	25	
1,1-Dichloropropene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	6	25	
1,2,3-Trichlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	5	25	
1,2,3-Trichloropropane	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
1,2,4-Trichlorobenzene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
1,2,4-Trimethylbenzene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
1,2-Dibromo-3-Chloropropane	0.0391	0.0050	mg/kg wet	0.05000		78	70-130	1	25	
1,2-Dibromoethane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2-Dichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	5	25	
1,2-Dichloroethane	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	4	25	
1,2-Dichloropropane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	3	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch C162017 - 5035

1,3,5-Trimethylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	7	25	
1,3-Dichlorobenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	6	25	
1,3-Dichloropropane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	3	25	
1,4-Dichlorobenzene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	7	25	
1,4-Dioxane	1.42	0.100	mg/kg wet	1.000		142	70-130	5	20	B+
1-Chlorohexane	0.0413	0.0050	mg/kg wet	0.05000		83	70-130	8	25	
2,2-Dichloropropane	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	6	25	
2-Butanone	0.263	0.0500	mg/kg wet	0.2500		105	70-130	1	25	
2-Chlorotoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
2-Hexanone	0.259	0.0500	mg/kg wet	0.2500		104	70-130	3	25	
4-Chlorotoluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
4-Isopropyltoluene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
4-Methyl-2-Pentanone	0.258	0.0500	mg/kg wet	0.2500		103	70-130	1	25	
Acetone	0.250	0.0500	mg/kg wet	0.2500		100	70-130	3	25	
Benzene	0.0456	0.0050	mg/kg wet	0.05000		91	70-130	6	25	
Bromobenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	6	25	
Bromochloromethane	0.0471	0.0050	mg/kg wet	0.05000		94	70-130	4	25	
Bromodichloromethane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	4	25	
Bromoform	0.0452	0.0050	mg/kg wet	0.05000		90	70-130	0	25	
Bromomethane	0.0529	0.0100	mg/kg wet	0.05000		106	70-130	8	25	
Carbon Disulfide	0.0441	0.0050	mg/kg wet	0.05000		88	70-130	7	25	
Carbon Tetrachloride	0.0458	0.0050	mg/kg wet	0.05000		92	70-130	7	25	
Chlorobenzene	0.0469	0.0050	mg/kg wet	0.05000		94	70-130	4	25	
Chloroethane	0.0366	0.0100	mg/kg wet	0.05000		73	70-130	7	25	
Chloroform	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
Chloromethane	0.0533	0.0100	mg/kg wet	0.05000		107	70-130	5	25	
cis-1,2-Dichloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	5	25	
cis-1,3-Dichloropropene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
Dibromochloromethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
Dibromomethane	0.0493	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
Dichlorodifluoromethane	0.0464	0.0100	mg/kg wet	0.05000		93	70-130	9	25	
Diethyl Ether	0.0482	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Di-isopropyl ether	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	4	25	
Ethyl tertiary-butyl ether	0.0455	0.0050	mg/kg wet	0.05000		91	70-130	3	25	
Ethylbenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Hexachlorobutadiene	0.0443	0.0050	mg/kg wet	0.05000		89	70-130	7	25	
Isopropylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Methyl tert-Butyl Ether	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Methylene Chloride	0.0466	0.0250	mg/kg wet	0.05000		93	70-130	5	25	
Naphthalene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	0.5	25	
n-Butylbenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130	8	25	
n-Propylbenzene	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
sec-Butylbenzene	0.0459	0.0050	mg/kg wet	0.05000		92	70-130	8	25	
Styrene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130	4	25	
tert-Butylbenzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	7	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CI62017 - 5035

Tertiary-aryl methyl ether	0.0445	0.0050	mg/kg wet	0.05000		89	70-130	3	25	
Tetrachloroethene	0.0387	0.0050	mg/kg wet	0.05000		77	70-130	7	25	
Tetrahydrofuran	0.0457	0.0050	mg/kg wet	0.05000		91	70-130	7	25	
Toluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	5	25	
trans-1,2-Dichloroethene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	7	25	
trans-1,3-Dichloropropene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
Trichloroethene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	6	25	
Trichlorofluoromethane	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	8	25	
Vinyl Acetate	0.0426	0.0050	mg/kg wet	0.05000		85	70-130	0.4	25	
Vinyl Chloride	0.0512	0.0100	mg/kg wet	0.05000		102	70-130	7	25	
Xylene O	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	5	25	
Xylene P,M	0.0916	0.0100	mg/kg wet	0.1000		92	70-130	5	25	
Xylenes (Total)	0.138	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0532		mg/kg wet	0.05000		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.0478		mg/kg wet	0.05000		96	70-130			
Surrogate: Dibromofluoromethane	0.0520		mg/kg wet	0.05000		104	70-130			
Surrogate: Toluene-d8	0.0477		mg/kg wet	0.05000		95	70-130			

8081B Organochlorine Pesticides

Batch CI62221 - 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	0.0300	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0300	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CI62221 - 3546

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 Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [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							
Toxaphene	ND	0.125	mg/kg wet							
Toxaphene [2C]	ND	0.125	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0151		mg/kg wet	0.01250		121	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0148		mg/kg wet	0.01250		118	30-150			
Surrogate: Tetrachloro-m-xylene	0.0136		mg/kg wet	0.01250		108	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0133		mg/kg wet	0.01250		106	30-150			

LCS

4,4'-DDD	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
4,4'-DDD [2C]	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
4,4'-DDE	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
4,4'-DDE [2C]	0.0118	0.0025	mg/kg wet	0.01250		95	40-140			
4,4'-DDT	0.0127	0.0025	mg/kg wet	0.01250		102	40-140			
4,4'-DDT [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Aldrin	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
Aldrin [2C]	0.0117	0.0025	mg/kg wet	0.01250		93	40-140			
alpha-BHC	0.0117	0.0025	mg/kg wet	0.01250		93	40-140			
alpha-BHC [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
alpha-Chlordane	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
alpha-Chlordane [2C]	0.0116	0.0025	mg/kg wet	0.01250		92	40-140			
beta-BHC	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
beta-BHC [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
delta-BHC	0.0113	0.0025	mg/kg wet	0.01250		90	40-140			
delta-BHC [2C]	0.0110	0.0025	mg/kg wet	0.01250		88	40-140			
Dieldrin	0.0127	0.0025	mg/kg wet	0.01250		102	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch C162221 - 3546

Dieldrin [2C]	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Endosulfan I	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan I [2C]	0.0118	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan II	0.0121	0.0025	mg/kg wet	0.01250		97	40-140			
Endosulfan II [2C]	0.0117	0.0025	mg/kg wet	0.01250		94	40-140			
Endosulfan Sulfate	0.0128	0.0025	mg/kg wet	0.01250		103	40-140			
Endosulfan Sulfate [2C]	0.0123	0.0025	mg/kg wet	0.01250		99	40-140			
Endrin	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			
Endrin [2C]	0.0122	0.0025	mg/kg wet	0.01250		97	40-140			
Endrin Aldehyde	0.0128	0.0025	mg/kg wet	0.01250		102	40-140			
Endrin Aldehyde [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Endrin Ketone	0.0133	0.0025	mg/kg wet	0.01250		107	40-140			
Endrin Ketone [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140			
gamma-BHC (Lindane)	0.0117	0.0015	mg/kg wet	0.01250		94	40-140			
gamma-BHC (Lindane) [2C]	0.0115	0.0015	mg/kg wet	0.01250		92	40-140			
gamma-Chlordane	0.0119	0.0025	mg/kg wet	0.01250		95	40-140			
gamma-Chlordane [2C]	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor	0.0116	0.0025	mg/kg wet	0.01250		93	40-140			
Heptachlor [2C]	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor Epoxide	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
Heptachlor Epoxide [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Hexachlorobenzene	0.0128	0.0025	mg/kg wet	0.01250		102	40-140			
Hexachlorobenzene [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			
Methoxychlor	0.0129	0.0025	mg/kg wet	0.01250		103	40-140			
Methoxychlor [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			

Surrogate: Decachlorobiphenyl	0.0138		mg/kg wet	0.01250		110	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0135		mg/kg wet	0.01250		108	30-150			
Surrogate: Tetrachloro-m-xylene	0.0129		mg/kg wet	0.01250		103	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0124		mg/kg wet	0.01250		99	30-150			

LCS Dup										
4,4'-DDD	0.0139	0.0025	mg/kg wet	0.01250		111	40-140	11	30	
4,4'-DDD [2C]	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	12	30	
4,4'-DDE	0.0141	0.0025	mg/kg wet	0.01250		113	40-140	12	30	
4,4'-DDE [2C]	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	13	30	
4,4'-DDT	0.0145	0.0025	mg/kg wet	0.01250		116	40-140	13	30	
4,4'-DDT [2C]	0.0140	0.0025	mg/kg wet	0.01250		112	40-140	13	30	
Aldrin	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	13	30	
Aldrin [2C]	0.0133	0.0025	mg/kg wet	0.01250		106	40-140	13	30	
alpha-BHC	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	11	30	
alpha-BHC [2C]	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	12	30	
alpha-Chlordane	0.0135	0.0025	mg/kg wet	0.01250		108	40-140	13	30	
alpha-Chlordane [2C]	0.0132	0.0025	mg/kg wet	0.01250		106	40-140	14	30	
beta-BHC	0.0134	0.0025	mg/kg wet	0.01250		108	40-140	11	30	
beta-BHC [2C]	0.0133	0.0025	mg/kg wet	0.01250		106	40-140	13	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CI62221 - 3546

delta-BHC	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	13	30	
delta-BHC [2C]	0.0126	0.0025	mg/kg wet	0.01250		101	40-140	14	30	
Dieldrin	0.0145	0.0025	mg/kg wet	0.01250		116	40-140	13	30	
Dieldrin [2C]	0.0142	0.0025	mg/kg wet	0.01250		113	40-140	13	30	
Endosulfan I	0.0135	0.0025	mg/kg wet	0.01250		108	40-140	13	30	
Endosulfan I [2C]	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	13	30	
Endosulfan II	0.0137	0.0025	mg/kg wet	0.01250		110	40-140	12	30	
Endosulfan II [2C]	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	13	30	
Endosulfan Sulfate	0.0145	0.0025	mg/kg wet	0.01250		116	40-140	12	30	
Endosulfan Sulfate [2C]	0.0140	0.0025	mg/kg wet	0.01250		112	40-140	13	30	
Endrin	0.0143	0.0025	mg/kg wet	0.01250		114	40-140	12	30	
Endrin [2C]	0.0139	0.0025	mg/kg wet	0.01250		111	40-140	13	30	
Endrin Aldehyde	0.0144	0.0025	mg/kg wet	0.01250		115	40-140	12	30	
Endrin Aldehyde [2C]	0.0138	0.0025	mg/kg wet	0.01250		111	40-140	12	30	
Endrin Ketone	0.0150	0.0025	mg/kg wet	0.01250		120	40-140	12	30	
Endrin Ketone [2C]	0.0146	0.0025	mg/kg wet	0.01250		117	40-140	13	30	
gamma-BHC (Lindane)	0.0133	0.0015	mg/kg wet	0.01250		106	40-140	12	30	
gamma-BHC (Lindane) [2C]	0.0130	0.0015	mg/kg wet	0.01250		104	40-140	12	30	
gamma-Chlordane	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	13	30	
gamma-Chlordane [2C]	0.0133	0.0025	mg/kg wet	0.01250		107	40-140	14	30	
Heptachlor	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	12	30	
Heptachlor [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	12	30	
Heptachlor Epoxide	0.0141	0.0025	mg/kg wet	0.01250		113	40-140	13	30	
Heptachlor Epoxide [2C]	0.0139	0.0025	mg/kg wet	0.01250		111	40-140	13	30	
Hexachlorobenzene	0.0141	0.0025	mg/kg wet	0.01250		113	40-140	10	30	
Hexachlorobenzene [2C]	0.0140	0.0025	mg/kg wet	0.01250		112	40-140	10	30	
Methoxychlor	0.0149	0.0025	mg/kg wet	0.01250		119	40-140	14	30	
Methoxychlor [2C]	0.0143	0.0025	mg/kg wet	0.01250		114	40-140	12	30	
Surrogate: Decachlorobiphenyl	0.0152		mg/kg wet	0.01250		121	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0149		mg/kg wet	0.01250		119	30-150			
Surrogate: Tetrachloro-m-xylene	0.0137		mg/kg wet	0.01250		110	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0132		mg/kg wet	0.01250		106	30-150			

8082A Polychlorinated Biphenyls (PCB)

Batch CI62003 - 3540C

Blank

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8082A Polychlorinated Biphenyls (PCB)

Batch CI62003 - 3540C

Aroclor 1268	ND	0.0500	mg/kg wet							
<i>Surrogate: Decachlorobiphenyl</i>	0.0221		mg/kg wet	0.02500		89	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0240		mg/kg wet	0.02500		96	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0200		mg/kg wet	0.02500		80	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0218		mg/kg wet	0.02500		87	30-150			

LCS

Aroclor 1016	0.549	0.0500	mg/kg wet	0.5000		110	40-140			
Aroclor 1260	0.546	0.0500	mg/kg wet	0.5000		109	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	0.0222		mg/kg wet	0.02500		89	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0246		mg/kg wet	0.02500		99	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0213		mg/kg wet	0.02500		85	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0216		mg/kg wet	0.02500		86	30-150			

LCS Dup

Aroclor 1016	0.542	0.0500	mg/kg wet	0.5000		108	40-140	1	30	
Aroclor 1260	0.549	0.0500	mg/kg wet	0.5000		110	40-140	0.5	30	
<i>Surrogate: Decachlorobiphenyl</i>	0.0221		mg/kg wet	0.02500		88	30-150			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	0.0240		mg/kg wet	0.02500		96	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0206		mg/kg wet	0.02500		82	30-150			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	0.0209		mg/kg wet	0.02500		83	30-150			

8100M Total Petroleum Hydrocarbons

Batch CI61916 - 3546

Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

<i>Surrogate: O-Terphenyl</i>	4.46		mg/kg wet	5.000		89	40-140			
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LCS

Decane (C10)	2.0	0.2	mg/kg wet	2.500		82	40-140			
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		91	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CI61916 - 3546

Dodecane (C12)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140			
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		70	30-140			
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		92	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		91	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Total Petroleum Hydrocarbons	29.7	37.5	mg/kg wet	35.00		85	40-140			
Triacotane (C30)	2.3	0.2	mg/kg wet	2.500		94	40-140			

<i>Surrogate: O-Terphenyl</i>	4.90		mg/kg wet	5.000		98	40-140			
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LCS Dup

Decane (C10)	2.1	0.2	mg/kg wet	2.500		83	40-140	2	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Dodecane (C12)	2.2	0.2	mg/kg wet	2.500		88	40-140	1	25	
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		93	40-140	2	25	
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		93	40-140	1	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		92	40-140	2	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		87	40-140	1	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		74	30-140	5	25	
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		94	40-140	2	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	1	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		92	40-140	1	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		88	40-140	0.4	25	
Total Petroleum Hydrocarbons	29.6	37.5	mg/kg wet	35.00		85	40-140	0.3	25	
Triacotane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140	1	25	

<i>Surrogate: O-Terphenyl</i>	4.93		mg/kg wet	5.000		99	40-140			
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8270D Semi-Volatile Organic Compounds

Batch CI62009 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
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							
2,3,4,6-Tetrachlorophenol	ND	1.67	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch C162009 - 3546

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-Nitroaniline	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							
3-Nitroaniline	ND	0.333	mg/kg wet							
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet							
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet							
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet							
4-Chloroaniline	ND	0.667	mg/kg wet							
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet							
4-Nitroaniline	ND	0.333	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	0.667	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							
Benzoic Acid	ND	1.67	mg/kg wet							
Benzyl Alcohol	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							
Carbazole	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch C162009 - 3546

Fluoranthene	ND	0.333	mg/kg wet							
Fluorene	ND	0.333	mg/kg wet							
Hexachlorobenzene	ND	0.167	mg/kg wet							
Hexachlorobutadiene	ND	0.333	mg/kg wet							
Hexachlorocyclopentadiene	ND	1.67	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							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	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	2.71		mg/kg wet	3.333		81	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	4.06		mg/kg wet	5.000		81	30-130			
Surrogate: 2-Fluorobiphenyl	2.72		mg/kg wet	3.333		82	30-130			
Surrogate: 2-Fluorophenol	4.05		mg/kg wet	5.000		81	30-130			
Surrogate: Nitrobenzene-d5	2.69		mg/kg wet	3.333		81	30-130			
Surrogate: Phenol-d6	4.15		mg/kg wet	5.000		83	30-130			
Surrogate: p-Terphenyl-d14	3.08		mg/kg wet	3.333		92	30-130			

LCS

1,1-Biphenyl	2.23	0.333	mg/kg wet	3.333		67	40-140			
1,2,4-Trichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140			
1,2-Dichlorobenzene	2.06	0.333	mg/kg wet	3.333		62	40-140			
1,3-Dichlorobenzene	2.07	0.333	mg/kg wet	3.333		62	40-140			
1,4-Dichlorobenzene	2.03	0.333	mg/kg wet	3.333		61	40-140			
2,3,4,6-Tetrachlorophenol	2.25	1.67	mg/kg wet	3.333		67	30-130			
2,4,5-Trichlorophenol	2.55	0.333	mg/kg wet	3.333		76	30-130			
2,4,6-Trichlorophenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
2,4-Dichlorophenol	2.29	0.333	mg/kg wet	3.333		69	30-130			
2,4-Dimethylphenol	2.34	0.333	mg/kg wet	3.333		70	30-130			
2,4-Dinitrophenol	2.44	1.67	mg/kg wet	3.333		73	30-130			
2,4-Dinitrotoluene	2.66	0.333	mg/kg wet	3.333		80	40-140			
2,6-Dinitrotoluene	2.39	0.333	mg/kg wet	3.333		72	40-140			
2-Chloronaphthalene	2.08	0.333	mg/kg wet	3.333		62	40-140			
2-Chlorophenol	2.19	0.333	mg/kg wet	3.333		66	30-130			
2-Methylnaphthalene	2.17	0.333	mg/kg wet	3.333		65	40-140			
2-Methylphenol	2.22	0.333	mg/kg wet	3.333		67	30-130			
2-Nitroaniline	2.22	0.333	mg/kg wet	3.333		67	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch C162009 - 3546

2-Nitrophenol	2.17	0.333	mg/kg wet	3.333		65	30-130			
3,3'-Dichlorobenzidine	2.38	0.667	mg/kg wet	3.333		71	40-140			
3+4-Methylphenol	5.06	0.667	mg/kg wet	6.667		76	30-130			
3-Nitroaniline	2.51	0.333	mg/kg wet	3.333		75	40-140			
4,6-Dinitro-2-Methylphenol	2.71	1.67	mg/kg wet	3.333		81	30-130			
4-Bromophenyl-phenylether	2.41	0.333	mg/kg wet	3.333		72	40-140			
4-Chloro-3-Methylphenol	2.38	0.333	mg/kg wet	3.333		71	30-130			
4-Chloroaniline	2.20	0.667	mg/kg wet	3.333		66	40-140			
4-Chloro-phenyl-phenyl ether	2.28	0.333	mg/kg wet	3.333		68	40-140			
4-Nitroaniline	2.55	0.333	mg/kg wet	3.333		77	40-140			
4-Nitrophenol	2.46	1.67	mg/kg wet	3.333		74	30-130			
Acenaphthene	2.29	0.333	mg/kg wet	3.333		69	40-140			
Acenaphthylene	2.35	0.333	mg/kg wet	3.333		70	40-140			
Acetophenone	2.20	0.667	mg/kg wet	3.333		66	40-140			
Aniline	1.86	0.667	mg/kg wet	3.333		56	40-140			
Anthracene	2.54	0.333	mg/kg wet	3.333		76	40-140			
Azobenzene	2.35	0.333	mg/kg wet	3.333		70	40-140			
Benzo(a)anthracene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Benzo(a)pyrene	2.72	0.167	mg/kg wet	3.333		82	40-140			
Benzo(b)fluoranthene	2.75	0.333	mg/kg wet	3.333		83	40-140			
Benzo(g,h,i)perylene	2.67	0.333	mg/kg wet	3.333		80	40-140			
Benzo(k)fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140			
Benzoic Acid	2.00	1.67	mg/kg wet	3.333		60	40-140			
Benzyl Alcohol	2.16	0.333	mg/kg wet	3.333		65	40-140			
bis(2-Chloroethoxy)methane	2.19	0.333	mg/kg wet	3.333		66	40-140			
bis(2-Chloroethyl)ether	2.09	0.333	mg/kg wet	3.333		63	40-140			
bis(2-chloroisopropyl)Ether	2.16	0.333	mg/kg wet	3.333		65	40-140			
bis(2-Ethylhexyl)phthalate	2.52	0.333	mg/kg wet	3.333		76	40-140			
Butylbenzylphthalate	2.63	0.333	mg/kg wet	3.333		79	40-140			
Carbazole	2.67	0.333	mg/kg wet	3.333		80	40-140			
Chrysene	2.58	0.167	mg/kg wet	3.333		77	40-140			
Dibenzo(a,h)Anthracene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Dibenzofuran	2.27	0.333	mg/kg wet	3.333		68	40-140			
Diethylphthalate	2.50	0.333	mg/kg wet	3.333		75	40-140			
Dimethylphthalate	2.41	0.333	mg/kg wet	3.333		72	40-140			
Di-n-butylphthalate	2.72	0.333	mg/kg wet	3.333		82	40-140			
Di-n-octylphthalate	2.76	0.333	mg/kg wet	3.333		83	40-140			
Fluoranthene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Fluorene	2.39	0.333	mg/kg wet	3.333		72	40-140			
Hexachlorobenzene	2.47	0.167	mg/kg wet	3.333		74	40-140			
Hexachlorobutadiene	2.07	0.333	mg/kg wet	3.333		62	40-140			
Hexachlorocyclopentadiene	1.62	1.67	mg/kg wet	3.333		49	40-140			
Hexachloroethane	2.05	0.333	mg/kg wet	3.333		61	40-140			
Indeno(1,2,3-cd)Pyrene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Isophorone	2.26	0.333	mg/kg wet	3.333		68	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch C162009 - 3546

Naphthalene	2.12	0.333	mg/kg wet	3.333		63	40-140			
Nitrobenzene	2.14	0.333	mg/kg wet	3.333		64	40-140			
N-Nitrosodimethylamine	2.07	0.333	mg/kg wet	3.333		62	40-140			
N-Nitroso-Di-n-Propylamine	2.29	0.333	mg/kg wet	3.333		69	40-140			
N-nitrosodiphenylamine	2.60	0.333	mg/kg wet	3.333		78	40-140			
Pentachlorophenol	2.77	1.67	mg/kg wet	3.333		83	30-130			
Phenanthrene	2.49	0.333	mg/kg wet	3.333		75	40-140			
Phenol	2.33	0.333	mg/kg wet	3.333		70	30-130			
Pyrene	2.60	0.333	mg/kg wet	3.333		78	40-140			
Pyridine	1.93	1.67	mg/kg wet	3.333		58	40-140			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	2.14		mg/kg wet	3.333		64	30-130			
<i>Surrogate: 2,4,6-Tribromophenol</i>	3.80		mg/kg wet	5.000		76	30-130			
<i>Surrogate: 2-Chlorophenol-d4</i>	3.32		mg/kg wet	5.000		66	30-130			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.27		mg/kg wet	3.333		68	30-130			
<i>Surrogate: 2-Fluorophenol</i>	3.34		mg/kg wet	5.000		67	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	2.18		mg/kg wet	3.333		65	30-130			
<i>Surrogate: Phenol-d6</i>	3.39		mg/kg wet	5.000		68	30-130			
<i>Surrogate: p-Terphenyl-d14</i>	2.74		mg/kg wet	3.333		82	30-130			

LCS Dup

1,1-Biphenyl	2.24	0.333	mg/kg wet	3.333		67	40-140	0.5	30	
1,2,4-Trichlorobenzene	2.13	0.333	mg/kg wet	3.333		64	40-140	2	30	
1,2-Dichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140	1	30	
1,3-Dichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140	1	30	
1,4-Dichlorobenzene	2.03	0.333	mg/kg wet	3.333		61	40-140	0.08	30	
2,3,4,6-Tetrachlorophenol	2.31	1.67	mg/kg wet	3.333		69	30-130	3	30	
2,4,5-Trichlorophenol	2.57	0.333	mg/kg wet	3.333		77	30-130	0.9	30	
2,4,6-Trichlorophenol	2.35	0.333	mg/kg wet	3.333		71	30-130	0.3	30	
2,4-Dichlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	0.7	30	
2,4-Dimethylphenol	2.37	0.333	mg/kg wet	3.333		71	30-130	1	30	
2,4-Dinitrophenol	2.70	1.67	mg/kg wet	3.333		81	30-130	10	30	
2,4-Dinitrotoluene	2.75	0.333	mg/kg wet	3.333		82	40-140	3	30	
2,6-Dinitrotoluene	2.43	0.333	mg/kg wet	3.333		73	40-140	2	30	
2-Chloronaphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	0.2	30	
2-Chlorophenol	2.20	0.333	mg/kg wet	3.333		66	30-130	0.3	30	
2-Methylnaphthalene	2.17	0.333	mg/kg wet	3.333		65	40-140	0.2	30	
2-Methylphenol	2.26	0.333	mg/kg wet	3.333		68	30-130	2	30	
2-Nitroaniline	2.23	0.333	mg/kg wet	3.333		67	40-140	0.6	30	
2-Nitrophenol	2.24	0.333	mg/kg wet	3.333		67	30-130	3	30	
3,3'-Dichlorobenzidine	2.51	0.667	mg/kg wet	3.333		75	40-140	5	30	
3+4-Methylphenol	5.07	0.667	mg/kg wet	6.667		76	30-130	0.2	30	
3-Nitroaniline	2.53	0.333	mg/kg wet	3.333		76	40-140	0.7	30	
4,6-Dinitro-2-Methylphenol	2.79	1.67	mg/kg wet	3.333		84	30-130	3	30	
4-Bromophenyl-phenylether	2.41	0.333	mg/kg wet	3.333		72	40-140	0.2	30	
4-Chloro-3-Methylphenol	2.37	0.333	mg/kg wet	3.333		71	30-130	0.2	30	
4-Chloroaniline	2.19	0.667	mg/kg wet	3.333		66	40-140	0.4	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch C162009 - 3546

4-Chloro-phenyl-phenyl ether	2.29	0.333	mg/kg wet	3.333		69	40-140	0.8	30	
4-Nitroaniline	2.67	0.333	mg/kg wet	3.333		80	40-140	4	30	
4-Nitrophenol	2.61	1.67	mg/kg wet	3.333		78	30-130	6	30	
Acenaphthene	2.30	0.333	mg/kg wet	3.333		69	40-140	0.2	30	
Acenaphthylene	2.35	0.333	mg/kg wet	3.333		70	40-140	0.01	30	
Acetophenone	2.23	0.667	mg/kg wet	3.333		67	40-140	1	30	
Aniline	1.84	0.667	mg/kg wet	3.333		55	40-140	1	30	
Anthracene	2.59	0.333	mg/kg wet	3.333		78	40-140	2	30	
Azobenzene	2.33	0.333	mg/kg wet	3.333		70	40-140	0.8	30	
Benzo(a)anthracene	2.68	0.333	mg/kg wet	3.333		80	40-140	2	30	
Benzo(a)pyrene	2.82	0.167	mg/kg wet	3.333		84	40-140	3	30	
Benzo(b)fluoranthene	2.80	0.333	mg/kg wet	3.333		84	40-140	2	30	
Benzo(g,h,i)perylene	2.76	0.333	mg/kg wet	3.333		83	40-140	4	30	
Benzo(k)fluoranthene	2.79	0.333	mg/kg wet	3.333		84	40-140	4	30	
Benzoic Acid	2.19	1.67	mg/kg wet	3.333		66	40-140	9	30	
Benzyl Alcohol	2.17	0.333	mg/kg wet	3.333		65	40-140	0.4	30	
bis(2-Chloroethoxy)methane	2.19	0.333	mg/kg wet	3.333		66	40-140	0.1	30	
bis(2-Chloroethyl)ether	2.09	0.333	mg/kg wet	3.333		63	40-140	0.2	30	
bis(2-chloroisopropyl)Ether	2.20	0.333	mg/kg wet	3.333		66	40-140	2	30	
bis(2-Ethylhexyl)phthalate	2.66	0.333	mg/kg wet	3.333		80	40-140	6	30	
Butylbenzylphthalate	2.78	0.333	mg/kg wet	3.333		83	40-140	5	30	
Carbazole	2.77	0.333	mg/kg wet	3.333		83	40-140	3	30	
Chrysene	2.68	0.167	mg/kg wet	3.333		80	40-140	4	30	
Dibenzo(a,h)Anthracene	2.72	0.167	mg/kg wet	3.333		82	40-140	3	30	
Dibenzofuran	2.27	0.333	mg/kg wet	3.333		68	40-140	0.2	30	
Diethylphthalate	2.53	0.333	mg/kg wet	3.333		76	40-140	1	30	
Dimethylphthalate	2.40	0.333	mg/kg wet	3.333		72	40-140	0.2	30	
Di-n-butylphthalate	2.88	0.333	mg/kg wet	3.333		86	40-140	6	30	
Di-n-octylphthalate	2.92	0.333	mg/kg wet	3.333		88	40-140	6	30	
Fluoranthene	2.82	0.333	mg/kg wet	3.333		85	40-140	4	30	
Fluorene	2.38	0.333	mg/kg wet	3.333		72	40-140	0.4	30	
Hexachlorobenzene	2.49	0.167	mg/kg wet	3.333		75	40-140	0.9	30	
Hexachlorobutadiene	2.10	0.333	mg/kg wet	3.333		63	40-140	2	30	
Hexachlorocyclopentadiene	1.90	1.67	mg/kg wet	3.333		57	40-140	16	30	
Hexachloroethane	2.06	0.333	mg/kg wet	3.333		62	40-140	0.6	30	
Indeno(1,2,3-cd)Pyrene	2.72	0.333	mg/kg wet	3.333		81	40-140	3	30	
Isophorone	2.27	0.333	mg/kg wet	3.333		68	40-140	0.5	30	
Naphthalene	2.14	0.333	mg/kg wet	3.333		64	40-140	1	30	
Nitrobenzene	2.17	0.333	mg/kg wet	3.333		65	40-140	1	30	
N-Nitrosodimethylamine	2.00	0.333	mg/kg wet	3.333		60	40-140	4	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	0.9	30	
N-nitrosodiphenylamine	2.61	0.333	mg/kg wet	3.333		78	40-140	0.4	30	
Pentachlorophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	3	30	
Phenanthrene	2.54	0.333	mg/kg wet	3.333		76	40-140	2	30	
Phenol	2.29	0.333	mg/kg wet	3.333		69	30-130	2	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch C162009 - 3546										
Pyrene	2.68	0.333	mg/kg wet	3.333		81	40-140	3	30	
Pyridine	1.72	1.67	mg/kg wet	3.333		52	40-140	11	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.08		mg/kg wet	3.333		62	30-130			
Surrogate: 2,4,6-Tribromophenol	3.78		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Chlorophenol-d4	3.30		mg/kg wet	5.000		66	30-130			
Surrogate: 2-Fluorobiphenyl	2.21		mg/kg wet	3.333		66	30-130			
Surrogate: 2-Fluorophenol	3.22		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.16		mg/kg wet	3.333		65	30-130			
Surrogate: Phenol-d6	3.31		mg/kg wet	5.000		66	30-130			
Surrogate: p-Terphenyl-d14	2.75		mg/kg wet	3.333		83	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

Notes and Definitions

- Z-08 See Attached
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- 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+).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609407

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/water/dwp-services/labcert/documents/AllLabs.xls>

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

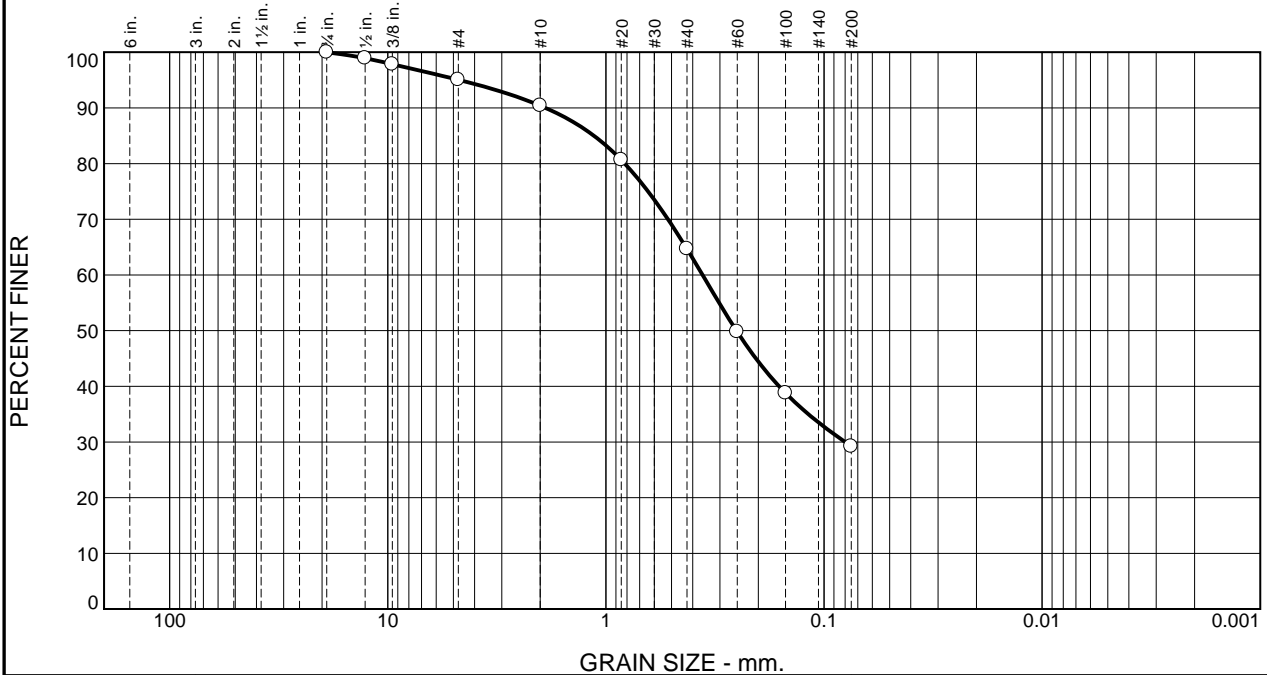
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	0.0	5.0	4.6	25.7	35.5	29.2

TEST RESULTS (D422)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.75	100.0		
0.5	98.9		
.375	97.8		
#4	95.0		
#10	90.4		
#20	80.7		
#40	64.7		
#60	49.8		
#100	38.8		
#200	29.2		

* (no specification provided)

Material Description

Brown silty sand

Atterberg Limits (ASTM D 4318)

PL= NP LL= NV PI=

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D₉₀= 1.8939 D₈₅= 1.1351 D₆₀= 0.3604
D₅₀= 0.2521 D₃₀= 0.0800 D₁₅=
D₁₀= C_u= C_c=

Remarks

As Received Unit Weight = 88 pcf.
As Received Moisture Content = 5.3%

Date Received: 9/20/2016 Date Tested: 9/21/2016
Tested By: GG
Checked By: Matthew Colman, P.E.
Title: Laboratory Manager

Source of Sample: Lopes Topsoil
Sample Number: 1609407-01

Depth: Stockpile

Date Sampled: 9/20/2016

Thielsch Engineering Inc.

Client: ESS/Charter Consulting Company
Project: Allens Ave Capping

Cranston, RI

Project No: 1609407

Figure 1609407-01

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPBTB/GZA/CMT

ESS Project ID: 1609407
 Date Received: 9/20/2016
 Project Due Date: ~~9/21/2016~~ 9/22/16
 Days for Project: ~~1 Day~~ 2 day

CMT 9/21/16

Shipped/Delivered Via: _____ Client _____

- | | |
|--|---|
| <p>1. Air bill manifest present? <input type="checkbox"/> No
 Air No.: _____ NA _____</p> <p>2. Were custody seals present? <input type="checkbox"/> No</p> <p>3. Is radiation count <100 CPM? <input type="checkbox"/> Yes</p> <p>4. Is a Cooler Present? <input type="checkbox"/> No
 Temp: <u>23.1</u> Iced with: <u>None</u></p> <p>5. Was COC signed and dated by client? <input type="checkbox"/> Yes</p> | <p>6. Does COC match bottles? <input type="checkbox"/> Yes</p> <p>7. Is COC complete and correct? <input type="checkbox"/> Yes</p> <p>8. Were samples received intact? <input type="checkbox"/> Yes</p> <p>9. Were labs informed about short holds & rushes? <input checked="" type="checkbox"/> Yes / No / NA</p> <p>10. Were any analyses received outside of hold time? <input checked="" type="checkbox"/> Yes / No</p> |
|--|---|

- | | |
|--|--|
| <p>11. Any Subcontracting needed? <input checked="" type="checkbox"/> Yes / No
 ESS Sample IDs: <u>GS/Proctor</u> <u>PH EXC. ACID</u>
 Analysis: <u>NUTRIENT</u>
 TAT: <u>24hr</u></p> | <p>12. Were VOAs received? <input checked="" type="checkbox"/> Yes / No
 a. Air bubbles in aqueous VOAs? <input checked="" type="checkbox"/> Yes / No
 b. Does methanol cover soil completely? <input checked="" type="checkbox"/> Yes / No / NA</p> |
|--|--|

13. Are the samples properly preserved? Yes / No
- a. If metals preserved upon receipt: Date: _____ Time: _____ By: _____
- b. Low Level VOA vials frozen: Date: 9/20/16 Time: 1000 By: WR

Sample Receiving Notes:

Vials created @ ESS 9/20/16 1000 WR

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	68316	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	68317	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	68318	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	68319	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	68321	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	68322	Yes	NA	Yes	VOA Vial - Other	other	
01	68323	Yes	NA	Yes	VOA Vial - Other	other	
01	68332	Yes	NA	Yes	Other	NP	

2nd Review

Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 9/20/16 1010

Reviewed By: [Signature] Date & Time: 9/20/16 1027

Delivered By: [Signature] Date & Time: 9/20/16 1050

Turf and Ornamental Soil Analysis Report

Spectrum Analytic

1087 Jamison Road NW
Washington Court House, OH 43160-8748

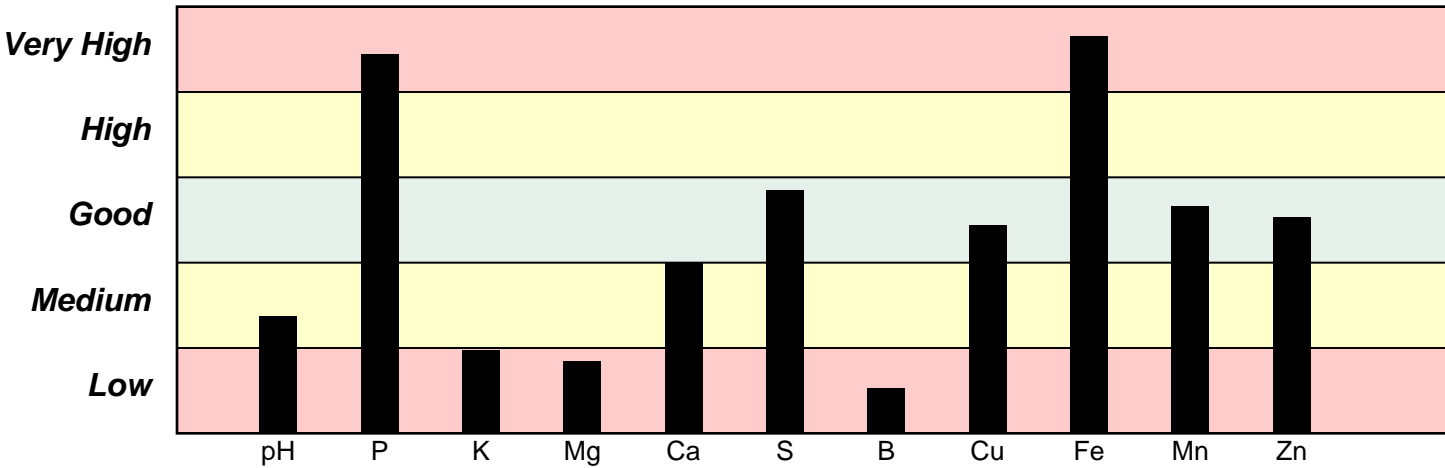
www.spectrumanalytic.com

CHARTER CONTRACTING
500 HARRISON AVE
BOSTON, MA 02118

Prepared For
KEVIN BRAGA 31 DAVID ST MATTAPAN, MA 02126

Sample Information			
Sample	LOPES TOPSOIL	Sampled	09-20-2016
Lab Number	B47378	Tested	09-22-2016

Analysis	Result	Optimal	Analysis	Result	Optimal	
Soil pH	5.5	6.0-6.8	Sulfur	m3-ppm	37	20-40
Buffer pH	6.7		Boron	m3-ppm	0.3	0.9-1.7
Organic Matter	%		Copper	m3-ppm	2.3	Varies
CEC	7.7		Iron	m3-ppm	169	9-40
K Saturation	%	2.0-4.0	Manganese	m3-ppm	19	Varies
Mg Saturation	%	10-20	Zinc	m3-ppm	7.7	3.9-10.9
Ca Saturation	%	50-70	Sodium	m3-ppm	45	
Na Saturation	%	0-10	Soluble Salts	mmhos/cm	0.38	No Data
K/Mg Ratio	1.1		Nitrate-N	ppm	64	
Ca/Mg Ratio	14.7					
Phosphorus	m3-ppm	182			50-80	
Potassium	m3-ppm	65			130-220	
Magnesium	m3-ppm	60			150-280	
Calcium	m3-ppm	879			900-1500	



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
17	Bluegrass, Kentucky, Turf	41D	4.0	0.0	3.6	0.5	0.0	0.0	0.0	0.0	0.0	0.1
17	Fescue, Tall, Turf		4.0	0.0	3.6	0.5	0.0	0.0	0.0	0.0	0.0	0.1
17	Ryegrass, Perennial, Turf		4.0	0.0	3.6	0.5	0.0	0.0	0.0	0.0	0.0	0.1

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Bluegrass, Kentucky, Turf: Where controlled release N is not used, split N application into thirds (March-May-Sept.). Monitor and adjust nutrient program with annual tissue analysis.

Fescue, Tall, Turf / Ryegrass, Perennial, Turf: Split apply fertilizer to best match grass growth and nutrient demand. Monitor and adjust nutrient program with annual plant analysis.

Turf and Ornamental Soil Analysis Report

Spectrum Analytic

1087 Jamison Road NW
Washington Court House, OH 43160-8748

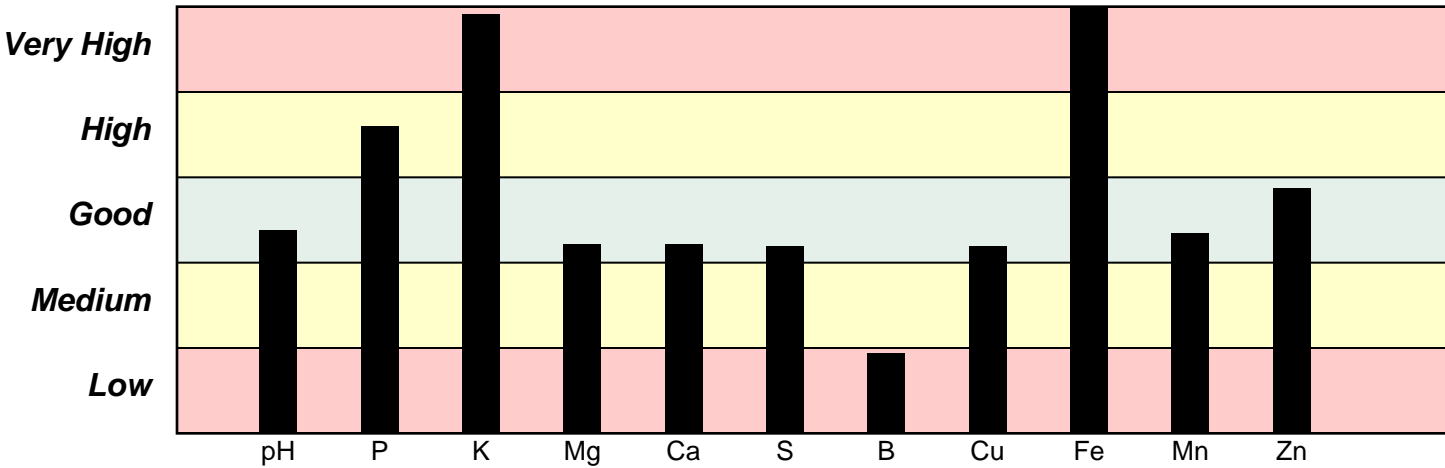
www.spectrumanalytic.com

CHARTER CONTRACTING
500 HARRISON AVE
BOSTON, MA 02118

Prepared For
KEVIN BRAGA 31 DAVID ST MATTAPAN, MA 02126

Sample Information			
Sample	SMITH PEAT TSL	Sampled	09-20-2016
Lab Number	B47379	Tested	09-22-2016

Analysis	Result	Optimal	Analysis	Result	Optimal
Soil pH	6.3	6.0-6.8	Sulfur	m3-ppm 24	20-40
Buffer pH	6.8		Boron	m3-ppm 0.7	1.7-2.6
Organic Matter %	3.5		Copper	m3-ppm 1.4	Varies
CEC	11.2		Iron	m3-ppm 278	9-40
K Saturation %	9.1	2.0-4.0	Manganese	m3-ppm 33	Varies
Mg Saturation %	13.9	10-20	Zinc	m3-ppm 10.2	3.9-10.9
Ca Saturation %	52.7	50-70	Sodium	m3-ppm 75	
Na Saturation %	2.9	0-10	Soluble Salts	mmhos/cm 0.55	No Data
K/Mg Ratio	2.2		Nitrate-N	ppm 38	
Ca/Mg Ratio	7.4				
Phosphorus m3-ppm	115	50-80			
Potassium m3-ppm	475	150-250			
Magnesium m3-ppm	213	180-320			
Calcium m3-ppm	1579	1500-2100			



Recommendations		Nutrients expressed in broadcast lbs/1000 sqft, except Fe (foliar) and Mn (row)										
Yr	Crop	CaCO3	N	P2O5	K2O	Mg	S	B	Cu	Fe	Mn	Zn
17	Bluegrass, Kentucky, Turf	10	4.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0
17	Fescue, Tall, Turf		4.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0
17	Ryegrass, Perennial, Turf		4.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0

Lime expressed in 100% pure CaCO3. Adjust accordingly. D=Dolomitic. C=Calcitic.

Bluegrass, Kentucky, Turf: Where controlled release N is not used, split N application into thirds (March-May-Sept.). Monitor and adjust nutrient program with annual tissue analysis.

Fescue, Tall, Turf / Ryegrass, Perennial, Turf: Split apply fertilizer to best match grass growth and nutrient demand. Monitor and adjust nutrient program with annual plant analysis.



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1609688

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 2:16 pm, Oct 03, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1609688

SAMPLE RECEIPT

The following samples were received on September 30, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The client did not deliver the samples in a cooler.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609688-01	Topsoil	Soil	6010C



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609688

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1609688

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
- 8015D - 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: Allens Ave
Client Sample ID: Topsoil
Date Sampled: 09/30/16 12:20
Percent Solids: 83

ESS Laboratory Work Order: 1609688
ESS Laboratory Sample ID: 1609688-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	2.79 (1.89)		6010C		1	KJK	09/30/16 14:43	3.17	100	CI62913
Lead	17.6 (3.78)		6010C		1	KJK	09/30/16 14:43	3.17	100	CI62913



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609688

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch C162913 - 3050B										
Blank										
Arsenic	ND	2.50	mg/kg wet							
Lead	ND	5.00	mg/kg wet							
LCS										
Arsenic	144	9.26	mg/kg wet	161.0		89	80-120			
Lead	132	18.5	mg/kg wet	138.0		95	80-120			
LCS Dup										
Arsenic	166	9.62	mg/kg wet	161.0		103	80-120	14	20	
Lead	148	19.2	mg/kg wet	138.0		107	80-120	12	20	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609688

Notes and Definitions

- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609688

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory

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

Turn Time 24 Standard Other _____

Regulatory State: MA (R) CT NH NJ NY ME Other _____

Is this project for any of the following: (please circle)
 MA-MCP Navy USACE CT DEP Other _____

Project # 2-1495

Project Name Allens Ave Capping

Address 500 Harrison Ave

City Boston State MA

Zip 02188

PO # _____

email: RMiller@charter-us

ESS Lab ID _____

Date 9/30/16

Collection Time 12:20

Grab-G Composite-C C

Matrix S

Sample ID Topsoil

Pres Code _____

of Containers 3

Type of Container 4oz

Vol of Container 4oz

Analysis Asaronic

Lead

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile V-VOA Matrix S-Soil SP-Solid D-Sludge VW-Wastewater GW-Groundwater SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present Yes No Internal Use Only

Seals Intact Yes No NA I I Pickup

Cooler Temperature: 20.9 ° N^o ICE M Technician JP

Sampled by: Ryan Miller

Comments:

Relinquished by (Signature, Date & Time) _____

Relinquished by (Signature, Date & Time) Ryan Miller 9/30/16 12:45

Relinquished by (Signature, Date & Time) _____

Relinquished by (Signature, Date & Time) _____

Received by (Signature, Date & Time) _____

Received by (Signature, Date & Time) _____

Received by (Signature, Date & Time) _____

Received by (Signature, Date & Time) _____

Received by (Signature, Date & Time) _____

1 (White) Lab Copy
 2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA



APPENDIX F
QUARRY CERTIFICATIONS



P.J. KEATING COMPANY

Asphalt and Crushed Stone
998 Reservoir Road
Lunenburg, Massachusetts 01462-0367
Tel: (978) 582-5200 • Fax: (978) 582-7130

July 18, 2016

Mr. Kyle M. Merkosky
Charter
500 Harrison Avenue, Suite 4R
Boston MA 02118

**RE: Delivery of Borrow Materials
National Grid/642 Allens Avenue Project**

Dear Mr. Merkosky:

I certify that P.J. Keating Company, located at 875 Phenix Avenue in Cranston, Rhode Island, is a proposed source of borrow or other materials to be used on the National Grid/642 Allens Avenue project, and that it is not the subject of any Release Notifications and has not otherwise been listed or identified by the Rhode Island Department of Environmental Management or the United States Environmental Protection Agency as a contaminated site. P.J. Keating does not accept any contaminated soil or other hazardous waste. P.J. Keating only stores oils and other chemicals associated with active operations on this site. I certify that all oils and other materials are stored in accordance with all applicable regulations, and there is no known or suspected contamination of soil or groundwater on this site.

Please contact me at 978-582-5268 with any questions.

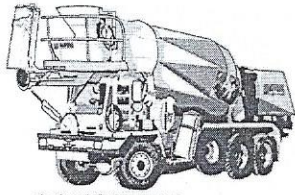
Sincerely,

Kendra S. Nawrocki
Environmental, Health and Safety Manager



An Old Castle Company

EQUAL OPPORTUNITY EMPLOYER



CONCRETE
(401) 453-1110

PROPOSAL -CONTRACT FOR MATERIAL AND/OR SERVICES

MATERIAL
SAND • STONE • CONCRETE

FAX: (401) 767-2070

618 Greenville Road, North Smithfield, Rhode Island 02896



SAND & STONE
(401) 232-3010

August 16, 2016

Charter Environmental
500 Harrison Avenue
Suite 4R
Boston, Mass., 02118

Re; National Grid, 642 Allens Avenue, Providence, R.I.

Attention; Mr. Ryan Miller, Project Engineer

Dear Mr. Miller;

This letter is to certify that our quarry and plant location at Pine Hill Rd., North Smithfield, R. I. is in full compliance with the requirements of RIDEM-RDEC.

All our products including the 2.0 " crushed stone supplied for the above mentioned project are processed from naturally occurring raw materials at this location.

They are free from contamination by any foreign or deleterious substances. They do not contain hazardous salts, oils, debris or compounds in quantities exceeding the maximum allowable limits of either RIDEM or RDEC.

Respectfully submitted;

Robert Babine
Technical Director
rbabine@materialconcrete.com
401-639-4168



APPENDIX G

**SOIL DISPOSAL BILLS OF LADING (BOLS)
AND DISPOSAL CHARACTERIZATION LABORATORY REPORTS**

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) Goulet Trucking # 14-7/T-126

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the tariff of the carrier and available to the shipper, on request.
at Holder 18/21 Capping Project 09/14 20 16 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★ _____
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier _____ Car or Vehicle Initials _____ No. 14-7/T-126

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>337</u>		
	<u>ESM/Attended</u>			
	<u>35.00 TND</u>			
	<u>9/14/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Signature of Consignor _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT.

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced \$ _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

(The fine boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.)

Shipper, Per [Signature] Agent, Per [Signature]
9-14-16

Permanent post-office address of shipper _____

REDIFORM

Carbonless Speediset® Forms
Rediform, Inc. Made in U.S.A.

44-301•Triplicate
44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) Goulet Trucking #05-3 / T-97

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise in the tariff or other published rates, and are available to the shipper, on request.
at Holder-18/21 Capping Project 09/19 2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only)
Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier _____ Car or Vehicle Initials _____ No. 05-3 / T-97

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>EST 32 TON</u>		
		<u>EST 32 TON</u>	<u>34.29</u>	

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignment, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT.

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § (4706(e) (1)(A) and (B)).

The fine boxes used for this shipment conform to the specifications set forth in the box maker's certificate that you can find under requirements of the Consolidated Freight Classification.

[Signature]

Shipper, Per

[Signature]

Agent, Per

Permanent post-office address of shipper _____

REDIFORM

Carbonless Speediset® Forms
Rediform, Inc. Made in U.S.A.

44-301•Triplicate
44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) Goulet Trucking

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the applicable tariff and conditions of the Uniform Domestic Straight Bill of Lading set forth in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
at Holder 18/21 Capping Project 09/14 2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on its route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier _____ Car or Vehicle Initials _____ No. 15-09/T-111

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>30 T</u>		
	<u>ESHEI/ATD/CAL</u>			
	<u>26.71 TMS</u>			
	<u>9/14/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Signature of Consignor _____
Freight charges are PREPAID (unless marked collect) CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent of Consignor _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

The fibers used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature]
Shipper, Per

[Signature]
Agent, Per

Permanent post-office address of shipper _____

REDIFORM

Carbonless Speediset® Forms
Rediform, Inc. Made in U.S.A.

44-301•Triplicate
44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) Goulet Trucking 15-6 / T-122

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the applicable published rates and conditions of the carrier and are available to the shipper, on request.
at Holder 18/21 Capping Project 09/14 2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier _____ Car or Vehicle Initials _____ No. 15-6 / T-122

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>EST 32 TON</u>		
	<u>ESW/Atwood</u>			
	<u>3480</u>			
	<u>7/14/16</u>			

Subject to Section 7 of Conditions of applicable bill of Lading, if this shipment is to be delivered to the consignee without recourse on the consignee the consignee shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignee)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT.

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier
Per _____ (The signatory here acknowledges only the amount prepaid.)

\$ _____ Charges Advanced

†Shipper's imprint in lieu of stamp, not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

‡The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per [Signature] Agent, Per

Permanent post-office address of shipper _____

REDIFORM

Carbonless Speediset® Forms
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44-301•Triplicate
44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) Goulet Trucking 15-5/T-127

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the published rates and contracts available to the shipper, on request.
at Holder 16/21 Capping Project 09/14 2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service here performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier _____ Car or Vehicle Initials _____ No. 15-5/T-127

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>Est 30T</u>		
	<u>Shir Atlas</u>			
	<u>33.82 tons</u>			
	<u>9/14/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)
Freight charges are PREPAID unless marked collect. CHUCK BOX B. COLLETT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced _____

Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 1470 (c)(1)(A) and (B).

*The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereof and all other requirements of the Consolidated Freight Classification

[Signature] Shipper, Per [Signature] Agent, Per

Permanent post-office address of shipper _____



Carbonless Speediset® Forms
Rediform, Inc. Made in U.S.A.

44-301•Triplicate
44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) Goulet Trucking 05-3 / T-97

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the published rates and conditions of the carrier and are available to the shipper, on request.
at Folder 18/21 Capping Project 09/14 20 16 From 642 Aliens Ave., Providence, RI

the property described below, in apparent good order, except as noted contents and condition of contents of packages unknown, marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on a route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof of this shipment, or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only)
Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier _____ Car or Vehicle Initials _____ No. 05-3 / T-97

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>			
	<u>Esti / Akelah</u>			
	<u>43.85 tons</u>			
	<u>9/14/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the contract, the consignee shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignee)
Freight charges are PREPAID unless marked collect. CHECK BOX B - 041111

Received _____ to apply in prepayment of the charges on the property described hereon
Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Changes Advanced
[Shipper's amount in lieu of stamp and a printed Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 1470 (c)(1)(A) and (B).

The false weight used for this shipment conforms to the specifications set forth in the box maker's certificate thereon, and in other requirements of the consolidated Freight Classification.

[Signature] Shipper, Per [Signature] Agent, Per

Permanent post-office address of shipper _____



Carbonless Speediset® Forms
Rediform, Inc. Made in U.S.A.

44-301 • Tripartite
44-302 • Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Earth Solutions LLC

(Name of Carrier)

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper on request.
at Holder 18/21 Capping Project 11-3 20 16 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agree to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr., Loudon State NH ZIP 03307 County _____
Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier *[Signature]* Car or Vehicle Initials 3585APM No. T277841

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>≈ 33 TON</u>		
	<i>[Handwritten Signature]</i> <u>2/8-87 for</u> <u>1/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.
Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: \$ _____
† Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(e)(1)(A) and (B).
† The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____

STRAIGHT BILL OF LADING

Original - Not Negotiable

D. G. S. L. C. #2

Carrier's Pro No. 276-3
 Shipper's Bill of Lading No. _____
 Consignee's Reference/PO No. _____
 Carrier's Code (SCAC) _____

(Name of Carrier)

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper. If applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:

at Holder 18/21 Capping Project 11/31/2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
 Destination 67 International Dr., Loudon State NH 03307 County _____ Delivery Address ★ _____
 ★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
 Delivering Carrier [Signature] Car or Vehicle Initials DG 3M4 No. 7 T44/288NW

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>30T EST</u>		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor) _____

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon:

Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: _____

† Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
 NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
 The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
 Liability Limitation: Loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(e)(1)(A) and (B).
 ‡ The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____
 Permanent post-office address of shipper _____



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Original - Not Negotiable

STRAIGHT BILL OF LADING

TC Leasing
(Name of Carrier)

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:
at Holder 18/21 Capping Project 11/3/2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr. Loudon State NH ZIP 03307 County _____
Delivery Address ★ _____
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier TC Leasing Car or Vehicle Initials #426 No. 93024

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>			
	<u>35.68 tons</u>	<u>32 tons</u>		
	<u>10/13/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor) _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
† The finite box uses for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per *[Signature]* Agent, Per

Permanent post-office address of shipper _____



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STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

D&G-8

(Name of Carrier)

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:
at Holder 18/21 Capping Project 11/3/2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr, Loudon State NH ZIP 03307 County _____
Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier *[Signature]* Car or Vehicle Initials _____ No. *D&G-8*

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
<i>1 DT</i>	<i>Non-Hazardous Contaminated Soil for Recycling</i>	<i>30</i>	<i>TA</i>	
	<i>ESheriff/Att/Hub</i>			
	<i>36-43, June</i>			
	<i>11/3/16</i>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor) _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT
Received \$ _____ to apply in prepayment of the charges on the property described hereon.
Agent or Cashier _____
Per _____ (The signature here acknowledges only the amount prepaid.)
Charges Advanced: _____
\$ _____
†Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(e)(1)(A) and (B).
†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature]

Shipper, Per

Agent, Per

Permanent post-office address of shipper _____



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Original - Not Negotiable

STRAIGHT BILL OF LADING

Edward M. Ford Est
(Name of Carrier)

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:
at Holder 18/21 Capping Project Nov 20 16 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr, Loudon State NH ZIP 03307 County _____
Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier Public Fuel Car or Vehicle Initials AR2774 MA No. 42

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>34T</u>		
	<u>2 Mi A Plus</u>	<u>35.79 lbs</u>		
		<u>11/3/16</u>		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT
Received \$ _____
to apply in prepayment of the charges on the property described herein.
Agent or Cashier _____
Per _____
(The signature here acknowledges only the amount prepaid.)
Charges Advanced: _____
\$ _____
*Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

Angela Shipper, Per _____ Agent, Per _____
Permanent post-office address of shipper _____



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STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) TC

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:

at Holder 18/21 Capping Project 11-3 2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof; if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

(Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★

Destination 67 International Dr, Loudon State NH 03307 County _____

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier TC Car or Vehicle Initials 88716 No. 659

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>32 tons</u>		
	<u>32.62 tons</u>			
	<u>11/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced:

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitations of loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

† The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per [Signature] Agent, Per

Permanent post-office address of shipper _____



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Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier)

TC Leasing

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:

at Holder 18/21 Capping Project 11/3/2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

(Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★

Destination 67 International Dr. Loudon State NH ZIP 03307 County _____

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereat.

Route _____

Delivering Carrier

TC Leasing

Car or Vehicle Initials

TC 863 No. 80815 / T-15

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	Non-Hazardous Contaminated Soil for Recycling			
	<i>ESW/Articles</i>			
	<i>34.66 Tons</i>			
	<i>11/3/16</i>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:

The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described herein.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced:

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(e)(1)(A) and (B).

The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon and all other requirements of the Consolidated Freight Classification.

Angela

Shipper, Per

Agent, Per

Permanent post-office address of shipper _____

REDIFORM

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44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier)

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request;
at Holder 18/21 Capping Project 11/3 2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr. Loudon State NH ZIP 03307 County _____
Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier TC Car or Vehicle Initials 61 No. MADL 536418235

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>32 TN</u>		
	<u>Evenly Attached</u>			
	<u>32, 38</u>			
	<u>June</u>			
	<u>11/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
(Signature of Consignor) _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT
Received \$ _____
to apply in prepayment of the charges on the property described hereon.
Agent or Cashier _____
Per _____
(The signature here acknowledges only the amount prepaid.)
Charges Advanced: _____
\$ _____
†Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706 (b) (3) and (B).
†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consensus Freight Classification.

Angela Shipper, Per _____ Agent, Per _____

Original - Not Negotiable

STRAIGHT BILL OF LADING

Earth Solutions

(Name of Carrier)

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:
at Holder 18/21 Capping Project 11/3/2016 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr. Loudon State NH ZIP 03307 County _____
Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

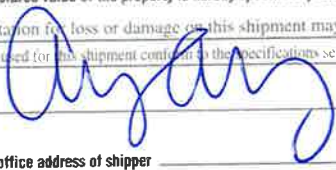
Route _____
Delivering Carrier  Car or Vehicle Initials 5505APWH No. 3505AP

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>34</u>		
	<u>38 61 tax</u>			
	<u>11/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor) _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT
Received \$ _____
to apply in prepayment of the charges on the property described hereon.
Agent or Cashier _____
Per _____
(The signature here acknowledges only the amount prepaid.)
Charges Advanced: _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
† The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

 Shipper, Per _____ Agent, Per _____

Permanent post-office address of shipper _____



Carbonless Speediset® Forms
Rediform, Inc. Made in U.S.A.

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Original - Not Negotiable

STRAIGHT BILL OF LADING

TC Leasing
(Name of Carrier)

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:
at Holder 18/21 Capping Project 11-3-16 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr, Loudon State NH ZIP 03307 County _____ Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier TC Leasing Car or Vehicle Initials 93024 MA No. 426

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>			
	<u>Estu / A / tub</u>	<u>32 tons</u>		
	<u>3588 tons</u>			
	<u>11/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor) _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: _____

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____
Permanent post-office address of shipper _____
REDIFORM Carbonless Speediset® Forms Rediform, Inc. Made in U.S.A. 44-301•Triplicate 44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Edward M Ford Esq
(Name of Carrier)

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier, and are available to the shipper, as request:
at Holder 18/21 Capping Project Nov 3 20 16 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr, Loudon State NH ZIP 03307 County _____
Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier Eddie Ford Car or Vehicle Initials ARS 774 No. 41

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>34T</u>		
	<u>ESHI (Attolub)</u>			
	<u>35.16 TONS</u>			
	<u>11/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor) _____
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____
Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced: \$ _____
†Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____

Permanent post-office address of shipper _____



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STRAIGHT BILL OF LADING

Original - Not Negotiable

DTC Ent LLC

(Name of Carrier)

Carrier's Pro No. DTC-3N14
 Shipper's Bill of Lading No. _____
 Consignee's Reference/PO No. _____
 Carrier's Code (SCAC) _____

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper on request:
 at Holder 18/21 Capping Project 11/3 20 16 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
 Destination 67 International Dr. Loudon State NH ZIP 03307 County _____
 Delivery Address ★
 ★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
 Delivering Carrier *[Signature]* DTC Ent Car or Vehicle Initials DTC-3N14 74128814# 3

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>(31 T 65T)</u>		
	<u>8500/4000</u>			
	<u>35.70 TMS</u>			
	<u>11/3/16</u>			

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.
 (Signature of Consignor) _____
 Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT
 Received \$ _____ to apply in prepayment of the charges on the property described herein.
 Agent or Cashier _____
 Per _____ (The signature here acknowledges only the amount prepaid.)
 Charges Advanced: _____
 † Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
 NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
 The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
 Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
 ‡ The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____
 Permanent post-office address of shipper _____



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 44-302•Quadruplicate

Original - Not Negotiable

STRAIGHT BILL OF LADING

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

(Name of Carrier) TC

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request:
at Holder 18/21 Capping Project 11-3 2014 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt (Mail or street address of consignee - For purposes of notification only.)
Destination 67 International Dr. Loudon State NH ZIP 03307 County _____ Delivery Address ★
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____
Delivering Carrier TC Car or Vehicle Initials 88716 No. 657

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>32 tons</u>		
<u>Shel/Atkins</u> <u>32.58 tons</u> <u>11/3/14</u>				

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignee, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)
Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____

Per _____ (The signature here acknowledges only the amount prepaid.)

\$ _____ Charges Advanced

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____
Permanent post-office address of shipper _____



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44-301•Triplicate
44-302•Quadruplicate

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Carrier's Pro No. _____
Shipper's Bill of Lading No. _____
Consignee's Reference/PO No. _____
Carrier's Code (SCAC) _____

TC Lease
(Name of Carrier)

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request;
at Providence, RI From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____
(Mail or street address of consignee - For purposes of notification only.)
Delivery Address ★

Route _____
★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Delivering Carrier _____ Car or Vehicle Initials TC No. 735

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>32</u>		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor) _____

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____
to apply in prepayment of the charges on the property described hereon.

Agent or Cashier _____

Per _____
(The signature here acknowledges only the amount prepaid.)

Charges Advanced: \$ _____

†Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).
†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per _____ Agent, Per _____

4

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Carrier's Pro No. _____
 Shipper's Bill of Lading No. _____
 Consignee's Reference/PO No. _____
 Carrier's Code (SCAC) _____

(Name of Carrier) TC

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request;

at Folder 18/21 Capping Project 11/21/18 20 From 642 Allens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

(Mail or street address of consignee - For purposes of notification only.)

Destination 67 International Dr. Loudon State NH Zip 03307 County _____

Delivery Address ★

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier TCL

Car or Vehicle Initials x

No. x 61

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>x 30</u>		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced:

†Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight. NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(c)(1)(A) and (B).

†The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

Shipper, Per _____

Agent, Per _____

Permanent post-office address of shipper _____

REDIFORM

Carbonless Speediset® Forms
 Rediform, Inc. Made in U.S.A.

44-301•Triplicate
 44-302•Quadruplicate

4

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Carrier's Pro No. _____
 Shipper's Bill of Lading No. _____
 Consignee's Reference/PO No. _____
 Carrier's Code (SCAC) _____

(Name of Carrier)

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request;

at Providence, RI 11/21/76 20 From 642 Aikens Ave., Providence, RI

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt

Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only.)
 Delivery Address ★ _____

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier TC Car or Vehicle Initials X 426 No. X

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>X 32 lbs</u>		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT

Received \$ _____ to apply in prepayment of the charges on the property described hereon.

Agent or Cashier

Per _____ (The signature here acknowledges only the amount prepaid.)

Charges Advanced:

† Shipper's imprint in lieu of stamp, not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight. NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding per _____

Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(e)(1)(A) and (B).

† The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

[Signature] Shipper, Per X [Signature] Agent, Per

Permanent post-office address of shipper _____

REDIFORM

Carbonless Speediset® Forms
 Rediform, Inc. Made in U.S.A.

44-301•Triplicate
 44-302•Quadruplicate

4

This Memorandum

is an acknowledgment that a Bill of Lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record.

Carrier's Pro No. _____
 Shipper's Bill of Lading No. _____
 Consignee's Reference/PO No. _____
 Carrier's Code (SCAC) _____

(Name of Carrier) ATC Leasing

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the most classifications and rules that have been established by the carrier and are available to the shipper, on request; 642 Allens Ave., Providence, RI
 at _____ 20 _____ From _____

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract), agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

Consigned to Environmental Soil Mgmt.
 Destination 67 International Dr. Loudon State NH Zip 03307 County _____ (Mail or street address of consignee - For purposes of notification only.)
 Delivery Address ★ _____

★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.

Route _____

Delivering Carrier TC Car or Vehicle Initials X No. X 426

No. Packages	Kind of Package, Description of Articles, Special Marks, and Exceptions	*WEIGHT (Subject to Correction)	Class or Rate	Check Column
	<u>Non-Hazardous Contaminated Soil for Recycling</u>	<u>X 32 tons</u>		

Subject to Section 7 of Conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

 (Signature of Consignor)
 Freight charges are PREPAID unless marked collect. CHECK BOX IF COLLECT
 Received \$ _____
 to apply in prepayment of the charges on the property described hereon.

 Agent or Cashier
 Per _____
 (The signature here acknowledges only the amount prepaid.)
 \$ _____
 Charges Advanced:

 †Shipper's imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission.

* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading state whether it is carrier's or shipper's weight.
 NOTE - Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
 The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____
 Liability Limitation for loss or damage on this shipment may be applicable. See 49 U.S.C. § 14706(e)(1)(A) and (B).
 †The fibre boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Consolidated Freight Classification.

 Shipper, Per _____ Agent, Per _____



CERTIFICATE OF ANALYSIS

Kyle Merkosky
 Charter Contracting Company
 500 Harris Ave, Suite 4R
 Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1608657

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, Aug 29, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1608657

SAMPLE RECEIPT

The following samples were received on August 24, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1608657-01	OX-1	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8081B, 8082A, 8100M, 8151A, 8260B, 8270D, 9045, 9050A
1608657-02	H 18/21 S1	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8081B, 8082A, 8100M, 8151A, 8260B, 8270D, 9045, 9050A
1608657-03	H 18/21 S2	Soil	1010, 6010C, 6020A, 7.3.3.2, 7.3.4.1, 7471B, 8081B, 8082A, 8100M, 8151A, 8260B, 8270D, 9045, 9050A



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

CZH0491-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
1,4-Dioxane - Screen (41% @ 30%)

8081B Organochlorine Pesticides

1608657-01 Elevated Method Reporting Limits due to sample matrix (EL).
1608657-01 Lower value is used due to matrix interferences (LC).
Endrin Aldehyde [2C]
1608657-01 Percent difference between primary and confirmation results exceeds 40% (P).
Endrin Aldehyde [2C]
1608657-01 Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
Tetrachloro-m-xylene (3140% @ 30-150%), Tetrachloro-m-xylene [2C] (8420% @ 30-150%)
1608657-02 Lower value is used due to matrix interferences (LC).
4,4'-DDT
1608657-02 Percent difference between primary and confirmation results exceeds 40% (P).
4,4'-DDT
1608657-03 Lower value is used due to matrix interferences (LC).
Endosulfan II
1608657-03 Percent difference between primary and confirmation results exceeds 40% (P).
Endosulfan II
CZH0501-CCV1 Continuing Calibration %Diff/Drift is above control limit (CD+).
delta-BHC [2C] (21% @ 20%), Methoxychlor [2C] (23% @ 20%)
CZH0501-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).
delta-BHC [2C] (26% @ 20%)
CZH0501-CCV3 Continuing Calibration %Diff/Drift is below control limit (CD-).
Decachlorobiphenyl (25% @ 20%), Endrin Ketone (21% @ 20%)
CZH0516-CCV3 Continuing Calibration %Diff/Drift is above control limit (CD+).
delta-BHC [2C] (27% @ 20%)

8151A Chlorinated Herbicides

1608657-01 Modified result
MCPA , MCPP [2C]
1608657-01 Peaks found in the retention time window for MCPP, MCPA did not confirm by GC/MS.
MCPA , MCPP [2C]
1608657-01 Percent difference between primary and confirmation results exceeds 40% (P).
2,4-D
1608657-01 Surrogate recovery(ies) above upper control limit (S+).
DCAA (234% @ 30-150%)
CH62424-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
Dichlorprop [2C] (39% @ 30%)
CZH0456-CCV4 Continuing Calibration %Diff/Drift is above control limit (CD+).
MCPA (51% @ 20%)



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

8270D Semi-Volatile Organic Compounds

- 1608657-01 Surrogate recovery(ies) below lower control limit (S-).
2-Fluorobiphenyl (% @ 30-130%)
- CZH0448-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (86% @ 80-120%), Benzoic Acid (82% @ 80-120%)
- CZH0448-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
Hexachlorocyclopentadiene (45% @ 20%)
- CZH0492-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (72% @ 80-120%), Benzoic Acid (82% @ 80-120%)
- CZH0492-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
2,4-Dinitrophenol (28% @ 20%), bis(2-Ethylhexyl)phthalate (23% @ 20%), Butylbenzylphthalate (24% @ 20%), Chrysene (23% @ 20%), Di-n-octylphthalate (30% @ 20%), Hexachlorocyclopentadiene (31% @ 20%)
- CZH0495-CCV1 Calibration required quadratic regression (Q).
2,4-Dinitrophenol (78% @ 80-120%), Benzoic Acid (80% @ 80-120%)
- CZH0495-CCV1 Continuing Calibration %Diff/Drift is below control limit (CD-).
2,4-Dinitrophenol (22% @ 20%), bis(2-Ethylhexyl)phthalate (24% @ 20%), Butylbenzylphthalate (24% @ 20%), Di-n-octylphthalate (29% @ 20%), Hexachlorocyclopentadiene (43% @ 20%)

Total Metals

- CH62416-BSD1 Relative percent difference for duplicate is outside of criteria (D+).
Barium (9% @ 20%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [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: Allens Ave

ESS Laboratory Work Order: 1608657

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
- 8015D - 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: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	9.69 (2.62)		6010C		1	KJK	08/26/16 3:45	2.07	100	CH62416
Barium	37.6 (2.62)		6010C		1	KJK	08/26/16 3:45	2.07	100	CH62416
Cadmium	ND (0.52)		6010C		1	KJK	08/26/16 3:45	2.07	100	CH62416
Chromium	14.0 (1.05)		6010C		1	KJK	08/26/16 3:45	2.07	100	CH62416
Lead	144 (5.25)		6010C		1	KJK	08/26/16 3:45	2.07	100	CH62416
Mercury	0.489 (0.033)		7471B		1	BJV	08/24/16 15:34	0.65	40	CH62415
Selenium	ND (0.52)		6020A		20	NAR	08/25/16 14:14	2.07	100	CH62416
Silver	ND (0.52)		6010C		1	KJK	08/26/16 3:45	2.07	100	CH62416



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: OX-1
 Date Sampled: 08/24/16 10:00
 Percent Solids: 92
 Initial Volume: 19.2
 Final Volume: 15
 Extraction Method: 5035

ESS Laboratory Work Order: 1608657
 ESS Laboratory Sample ID: 1608657-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,1,1-Trichloroethane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,1,2,2-Tetrachloroethane	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,1,2-Trichloroethane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,1-Dichloroethane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,1-Dichloroethene	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,1-Dichloropropene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2,3-Trichlorobenzene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2,3-Trichloropropane	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2,4-Trichlorobenzene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2,4-Trimethylbenzene	24.3 (18.7)	1.87	8260B		100	08/26/16 15:17	CZH0491	CH62529
1,2-Dibromo-3-Chloropropane	ND (0.935)	0.187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2-Dibromoethane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2-Dichlorobenzene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2-Dichloroethane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,2-Dichloropropane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,3,5-Trimethylbenzene	8.75 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,3-Dichlorobenzene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,3-Dichloropropane	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,4-Dichlorobenzene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
1,4-Dioxane - Screen	ND (37.4)	35.5	8260B		1	08/25/16 20:04	CZH0491	CH62529
1-Chlorohexane	ND (0.187)	0.0748	8260B		1	08/25/16 20:04	CZH0491	CH62529
2,2-Dichloropropane	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
2-Butanone	ND (0.935)	0.636	8260B		1	08/25/16 20:04	CZH0491	CH62529
2-Chlorotoluene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
2-Hexanone	ND (0.935)	0.280	8260B		1	08/25/16 20:04	CZH0491	CH62529
4-Chlorotoluene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
4-Isopropyltoluene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
4-Methyl-2-Pentanone	ND (0.935)	0.299	8260B		1	08/25/16 20:04	CZH0491	CH62529
Acetone	J 0.516 (0.935)	0.505	8260B		1	08/25/16 20:04	CZH0491	CH62529
Benzene	18.6 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Bromobenzene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 19.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
Bromodichloromethane	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Bromoform	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Bromomethane	ND (0.187)	0.0748	8260B		1	08/25/16 20:04	CZH0491	CH62529
Carbon Disulfide	2.19 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Carbon Tetrachloride	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Chlorobenzene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Chloroethane	ND (0.187)	0.0748	8260B		1	08/25/16 20:04	CZH0491	CH62529
Chloroform	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Chloromethane	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
cis-1,2-Dichloroethene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
cis-1,3-Dichloropropene	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
Dibromochloromethane	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Dibromomethane	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
Dichlorodifluoromethane	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
Diethyl Ether	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
Di-isopropyl ether	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Ethyl tertiary-butyl ether	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Ethylbenzene	2.81 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Hexachlorobutadiene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Isopropylbenzene	J 0.0710 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Methyl tert-Butyl Ether	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
Methylene Chloride	ND (0.374)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Naphthalene	983 (18.7)	3.74	8260B		100	08/26/16 15:17	CZH0491	CH62529
n-Butylbenzene	0.411 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
n-Propylbenzene	0.572 (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
sec-Butylbenzene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Styrene	J 0.150 (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
tert-Butylbenzene	ND (0.187)	0.0187	8260B		1	08/25/16 20:04	CZH0491	CH62529
Tertiary-amyl methyl ether	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Tetrachloroethene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Tetrahydrofuran	ND (0.935)	0.299	8260B		1	08/25/16 20:04	CZH0491	CH62529



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 19.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	56.8 (18.7)	1.87	8260B		100	08/26/16 15:17	CZH0491	CH62529
trans-1,2-Dichloroethene	ND (0.187)	0.0561	8260B		1	08/25/16 20:04	CZH0491	CH62529
trans-1,3-Dichloropropene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Trichloroethene	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Trichlorofluoromethane	ND (0.187)	0.0748	8260B		1	08/25/16 20:04	CZH0491	CH62529
Vinyl Acetate	ND (0.187)	0.0935	8260B		1	08/25/16 20:04	CZH0491	CH62529
Vinyl Chloride	ND (0.187)	0.0374	8260B		1	08/25/16 20:04	CZH0491	CH62529
Xylene O	19.8 (18.7)	1.87	8260B		100	08/26/16 15:17	CZH0491	CH62529
Xylene P,M	41.1 (37.4)	3.74	8260B		100	08/26/16 15:17	CZH0491	CH62529
Xylenes (Total)	61.0 (37.4)		8260B		100	08/26/16 15:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	93 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	96 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	98 %		70-130
<i>Surrogate: Toluene-d8</i>	93 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 19.8
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: JXS
Prepared: 8/25/16 15:11

8081B Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
4,4'-DDE	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
4,4'-DDT	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Aldrin	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
alpha-BHC	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
alpha-Chlordane	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
beta-BHC	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Chlordane (Total)	ND (0.329)		8081B		10	08/29/16 12:31	CZH0516	CH62945
delta-BHC	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Dieldrin [2C]	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Endosulfan I	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Endosulfan II	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Endosulfan Sulfate	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Endrin	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Endrin Aldehyde [2C]	LC, P 0.542 (0.0686)		8081B		25	08/27/16 5:23	CZH0516	CH62945
Endrin Ketone	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
gamma-BHC (Lindane)	ND (0.0165)		8081B		10	08/29/16 12:31	CZH0516	CH62945
gamma-Chlordane	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Heptachlor	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Heptachlor Epoxide	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Hexachlorobenzene	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Methoxychlor	ND (0.0274)		8081B		10	08/29/16 12:31	CZH0516	CH62945
Toxaphene	ND (1.37)		8081B		10	08/29/16 12:31	CZH0516	CH62945

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	<i>108 %</i>		<i>30-150</i>
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>122 %</i>		<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>3140 %</i>	<i>SM</i>	<i>30-150</i>
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>8420 %</i>	<i>SM</i>	<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: SMR
Prepared: 8/24/16 16:53

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1221	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1232	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1242	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1248	0.0794 (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1254	0.0814 (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1260	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1262	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938
Aroclor 1268	ND (0.0554)		8082A		1	08/29/16 11:59		CH62938

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	43 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	61 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	43 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	53 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/24/16 12:28

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	7020 (420)		8100M		10	08/25/16 17:10	CZH0487	CH62313
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		116 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 10.3
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/24/16 13:10

8151A Chlorinated Herbicides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2,4,5-T	ND (0.100)		8151A		10	08/26/16 18:59	CZH0456	CH62424
2,4,5-TP (Silvex)	0.613 (0.100)		8151A		10	08/26/16 18:59	CZH0456	CH62424
2,4-D	P 27.6 (19.8)		8151A		100	08/26/16 18:33	CZH0456	CH62424
2,4-DB	ND (2.00)		8151A		10	08/26/16 18:59	CZH0456	CH62424
Dalapon	ND (1.92)		8151A		10	08/26/16 18:59	CZH0456	CH62424
Dicamba	13.6 (0.099)		8151A		10	08/26/16 18:59	CZH0456	CH62424
Dichlorprop	ND (1.98)		8151A		10	08/26/16 18:59	CZH0456	CH62424
Dinoseb	ND (2.00)		8151A		10	08/26/16 18:59	CZH0456	CH62424
MCPA	#, XH ND (1960)		8151A		100	08/26/16 18:33	CZH0456	CH62424
MCPP [2C]	#, XH ND (198)		8151A		10	08/26/16 18:59	CZH0456	CH62424

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: DCAA</i>	<i>234 %</i>	<i>S+</i>	<i>30-150</i>
<i>Surrogate: DCAA [2C]</i>	<i>86 %</i>		<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 15.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	4.72 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
1,2,4-Trichlorobenzene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
1,2-Dichlorobenzene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
1,3-Dichlorobenzene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
1,4-Dichlorobenzene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,3,4,6-Tetrachlorophenol	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,4,5-Trichlorophenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,4,6-Trichlorophenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,4-Dichlorophenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,4-Dimethylphenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,4-Dinitrophenol	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,4-Dinitrotoluene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2,6-Dinitrotoluene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2-Chloronaphthalene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2-Chlorophenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2-Methylnaphthalene	127 (13.8)		8270D		20	08/26/16 16:15	CZH0492	CH62407
2-Methylphenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2-Nitroaniline	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
2-Nitrophenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
3,3'-Dichlorobenzidine	ND (2.77)		8270D		2	08/26/16 6:40	CZH0492	CH62407
3+4-Methylphenol	ND (2.77)		8270D		2	08/26/16 6:40	CZH0492	CH62407
3-Nitroaniline	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4,6-Dinitro-2-Methylphenol	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4-Bromophenyl-phenylether	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4-Chloro-3-Methylphenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4-Chloroaniline	ND (2.77)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4-Chloro-phenyl-phenyl ether	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4-Nitroaniline	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
4-Nitrophenol	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Acenaphthene	1.62 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Acenaphthylene	7.29 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Acetophenone	4.40 (2.77)		8270D		2	08/26/16 6:40	CZH0492	CH62407



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92
Initial Volume: 15.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (2.77)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Anthracene	4.36 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Azobenzene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzo(a)anthracene	8.19 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzo(a)pyrene	4.12 (0.693)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzo(b)fluoranthene	11.0 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzo(g,h,i)perylene	1.92 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzo(k)fluoranthene	3.29 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzoic Acid	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Benzyl Alcohol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
bis(2-Chloroethoxy)methane	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
bis(2-Chloroethyl)ether	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
bis(2-chloroisopropyl)Ether	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
bis(2-Ethylhexyl)phthalate	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Butylbenzylphthalate	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Carbazole	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Chrysene	8.95 (0.693)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Dibenzo(a,h)Anthracene	1.29 (0.693)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Dibenzofuran	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Diethylphthalate	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Dimethylphthalate	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Di-n-butylphthalate	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Di-n-octylphthalate	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Fluoranthene	20.3 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Fluorene	4.37 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Hexachlorobenzene	ND (0.693)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Hexachlorobutadiene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Hexachlorocyclopentadiene	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Hexachloroethane	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Indeno(1,2,3-cd)Pyrene	2.28 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Isophorone	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Naphthalene	495 (138)		8270D		200	08/26/16 16:53	CZH0492	CH62407



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: OX-1
 Date Sampled: 08/24/16 10:00
 Percent Solids: 92
 Initial Volume: 15.7
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1608657
 ESS Laboratory Sample ID: 1608657-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
N-Nitrosodimethylamine	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
N-Nitroso-Di-n-Propylamine	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
N-nitrosodiphenylamine	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Pentachlorophenol	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Phenanthrene	18.4 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Phenol	ND (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Pyrene	18.7 (1.38)		8270D		2	08/26/16 6:40	CZH0492	CH62407
Pyridine	ND (6.93)		8270D		2	08/26/16 6:40	CZH0492	CH62407

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	59 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	78 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	68 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	%	S-	30-130
<i>Surrogate: 2-Fluorophenol</i>	70 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	72 %		30-130
<i>Surrogate: Phenol-d6</i>	75 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	76 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: 92

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 1150 (5)		9050A		1	MJV	08/26/16 16:01	umhos/cm	CH62613
Corrosivity (pH)	2.44 (N/A)		9045		1	JLK	08/24/16 20:33	S.U.	CH62433
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.0 °C.								
Flashpoint	> 200 (N/A)		1010		1	MJV	08/25/16 12:30	°F	CH62505
Reactive Cyanide	ND (2.0)		7.3.3.2		1	CRR	08/24/16 11:15	mg/kg	CH62418
Reactive Sulfide	ND (2.0)		7.3.4.1		1	CRR	08/24/16 11:15	mg/kg	CH62418



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	2.98 (2.34)		6010C		1	KJK	08/26/16 3:49	2.32	100	CH62416
Barium	51.1 (2.34)		6010C		1	KJK	08/26/16 3:49	2.32	100	CH62416
Cadmium	ND (0.47)		6010C		1	KJK	08/26/16 3:49	2.32	100	CH62416
Chromium	10.5 (0.94)		6010C		1	KJK	08/26/16 3:49	2.32	100	CH62416
Lead	684 (4.68)		6010C		1	KJK	08/26/16 3:49	2.32	100	CH62416
Mercury	0.033 (0.033)		7471B		1	BJV	08/24/16 15:36	0.66	40	CH62415
Selenium	ND (0.47)		6020A		20	NAR	08/25/16 14:20	2.32	100	CH62416
Silver	ND (0.47)		6010C		1	KJK	08/26/16 3:49	2.32	100	CH62416



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 19.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,1,1-Trichloroethane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,1,2,2-Tetrachloroethane	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,1,2-Trichloroethane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,1-Dichloroethane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,1-Dichloroethene	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,1-Dichloropropene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2,3-Trichlorobenzene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2,3-Trichloropropane	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2,4-Trichlorobenzene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2,4-Trimethylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2-Dibromo-3-Chloropropane	ND (0.939)	0.188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2-Dibromoethane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2-Dichlorobenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2-Dichloroethane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,2-Dichloropropane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,3,5-Trimethylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,3-Dichlorobenzene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,3-Dichloropropane	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,4-Dichlorobenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
1,4-Dioxane - Screen	ND (37.5)	35.7	8260B		1	08/25/16 19:10	CZH0491	CH62529
1-Chlorohexane	ND (0.188)	0.0751	8260B		1	08/25/16 19:10	CZH0491	CH62529
2,2-Dichloropropane	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
2-Butanone	ND (0.939)	0.638	8260B		1	08/25/16 19:10	CZH0491	CH62529
2-Chlorotoluene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
2-Hexanone	ND (0.939)	0.282	8260B		1	08/25/16 19:10	CZH0491	CH62529
4-Chlorotoluene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
4-Isopropyltoluene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
4-Methyl-2-Pentanone	ND (0.939)	0.300	8260B		1	08/25/16 19:10	CZH0491	CH62529
Acetone	ND (0.939)	0.507	8260B		1	08/25/16 19:10	CZH0491	CH62529
Benzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Bromobenzene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 19.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
Bromodichloromethane	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Bromoform	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Bromomethane	ND (0.188)	0.0751	8260B		1	08/25/16 19:10	CZH0491	CH62529
Carbon Disulfide	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Carbon Tetrachloride	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Chlorobenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Chloroethane	ND (0.188)	0.0751	8260B		1	08/25/16 19:10	CZH0491	CH62529
Chloroform	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Chloromethane	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
cis-1,2-Dichloroethene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
cis-1,3-Dichloropropene	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
Dibromochloromethane	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Dibromomethane	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
Dichlorodifluoromethane	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
Diethyl Ether	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
Di-isopropyl ether	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Ethyl tertiary-butyl ether	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Ethylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Hexachlorobutadiene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Isopropylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Methyl tert-Butyl Ether	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
Methylene Chloride	ND (0.375)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Naphthalene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
n-Butylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
n-Propylbenzene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
sec-Butylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Styrene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
tert-Butylbenzene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Tertiary-amyl methyl ether	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Tetrachloroethene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Tetrahydrofuran	ND (0.939)	0.300	8260B		1	08/25/16 19:10	CZH0491	CH62529



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 19.1
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
trans-1,2-Dichloroethene	ND (0.188)	0.0563	8260B		1	08/25/16 19:10	CZH0491	CH62529
trans-1,3-Dichloropropene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Trichloroethene	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Trichlorofluoromethane	ND (0.188)	0.0751	8260B		1	08/25/16 19:10	CZH0491	CH62529
Vinyl Acetate	ND (0.188)	0.0939	8260B		1	08/25/16 19:10	CZH0491	CH62529
Vinyl Chloride	ND (0.188)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Xylene O	ND (0.188)	0.0188	8260B		1	08/25/16 19:10	CZH0491	CH62529
Xylene P,M	ND (0.375)	0.0375	8260B		1	08/25/16 19:10	CZH0491	CH62529
Xylenes (Total)	ND (0.375)		8260B		1	08/25/16 19:10		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>94 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 19.8
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/25/16 15:11

8081B Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
4,4'-DDE	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
4,4'-DDT	LC, P 0.0036 (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Aldrin	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
alpha-BHC	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
alpha-Chlordane	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
beta-BHC	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Chlordane (Total)	ND (0.0329)		8081B		1	08/27/16 2:46	CZH0501	CH62945
delta-BHC	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Dieldrin	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Endosulfan I	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Endosulfan II	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Endosulfan Sulfate	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Endrin	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Endrin Aldehyde	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Endrin Ketone	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
gamma-BHC (Lindane)	ND (0.0016)		8081B		1	08/27/16 2:46	CZH0501	CH62945
gamma-Chlordane	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Heptachlor	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Heptachlor Epoxide	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Hexachlorobenzene	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Methoxychlor	ND (0.0027)		8081B		1	08/27/16 2:46	CZH0501	CH62945
Toxaphene	ND (0.137)		8081B		1	08/27/16 2:46	CZH0501	CH62945

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	50 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	75 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	59 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	83 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/16 16:53

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1221	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1232	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1242	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1248	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1254	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1260	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1262	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403
Aroclor 1268	ND (0.0563)		8082A		1	08/25/16 20:31		CH62403

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	65 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	67 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	84 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 19.9
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/24/16 12:28

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (409)		8100M		10	08/25/16 17:51	CZH0487	CH62313
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>105 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 10.4
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 8/24/16 13:10

8151A Chlorinated Herbicides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2,4,5-T	ND (0.010)		8151A		1	08/26/16 17:39	CZH0456	CH62424
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	08/26/16 17:39	CZH0456	CH62424
2,4-D	ND (0.196)		8151A		1	08/26/16 17:39	CZH0456	CH62424
2,4-DB	ND (0.198)		8151A		1	08/26/16 17:39	CZH0456	CH62424
Dalapon	ND (0.190)		8151A		1	08/26/16 17:39	CZH0456	CH62424
Dicamba	ND (0.010)		8151A		1	08/26/16 17:39	CZH0456	CH62424
Dichlorprop	ND (0.196)		8151A		1	08/26/16 17:39	CZH0456	CH62424
Dinoseb	ND (0.198)		8151A		1	08/26/16 17:39	CZH0456	CH62424
MCPA [2C]	ND (19.4)		8151A		1	08/26/16 17:39	CZH0456	CH62424
MCPP	ND (19.6)		8151A		1	08/26/16 17:39	CZH0456	CH62424

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: DCAA</i>	<i>115 %</i>		<i>30-150</i>
<i>Surrogate: DCAA [2C]</i>	<i>97 %</i>		<i>30-150</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
1,2,4-Trichlorobenzene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
1,2-Dichlorobenzene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
1,3-Dichlorobenzene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
1,4-Dichlorobenzene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,3,4,6-Tetrachlorophenol	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,4,5-Trichlorophenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,4,6-Trichlorophenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,4-Dichlorophenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,4-Dimethylphenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,4-Dinitrophenol	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,4-Dinitrotoluene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2,6-Dinitrotoluene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2-Chloronaphthalene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2-Chlorophenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2-Methylnaphthalene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2-Methylphenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2-Nitroaniline	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
2-Nitrophenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
3,3'-Dichlorobenzidine	ND (0.754)		8270D		1	08/26/16 7:17	CZH0492	CH62407
3+4-Methylphenol	ND (0.754)		8270D		1	08/26/16 7:17	CZH0492	CH62407
3-Nitroaniline	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4,6-Dinitro-2-Methylphenol	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4-Bromophenyl-phenylether	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4-Chloro-3-Methylphenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4-Chloroaniline	ND (0.754)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4-Chloro-phenyl-phenyl ether	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4-Nitroaniline	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
4-Nitrophenol	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Acenaphthene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Acenaphthylene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Acetophenone	ND (0.754)		8270D		1	08/26/16 7:17	CZH0492	CH62407



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.754)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Anthracene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Azobenzene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzo(a)anthracene	0.941 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzo(a)pyrene	1.05 (0.189)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzo(b)fluoranthene	1.65 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzo(g,h,i)perylene	0.606 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzo(k)fluoranthene	0.648 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzoic Acid	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Benzyl Alcohol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
bis(2-Chloroethoxy)methane	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
bis(2-Chloroethyl)ether	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
bis(2-chloroisopropyl)Ether	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
bis(2-Ethylhexyl)phthalate	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Butylbenzylphthalate	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Carbazole	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Chrysene	1.02 (0.189)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Dibenzo(a,h)Anthracene	0.243 (0.189)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Dibenzofuran	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Diethylphthalate	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Dimethylphthalate	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Di-n-butylphthalate	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Di-n-octylphthalate	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Fluoranthene	2.35 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Fluorene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Hexachlorobenzene	ND (0.189)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Hexachlorobutadiene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Hexachlorocyclopentadiene	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Hexachloroethane	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Indeno(1,2,3-cd)Pyrene	0.536 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Isophorone	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Naphthalene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
N-Nitrosodimethylamine	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
N-Nitroso-Di-n-Propylamine	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
N-nitrosodiphenylamine	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Pentachlorophenol	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Phenanthrene	0.823 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Phenol	ND (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Pyrene	1.74 (0.377)		8270D		1	08/26/16 7:17	CZH0492	CH62407
Pyridine	ND (1.89)		8270D		1	08/26/16 7:17	CZH0492	CH62407

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	57 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	80 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	67 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	62 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	67 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	67 %		30-130
<i>Surrogate: Phenol-d6</i>	72 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	76 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: 92

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-02
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 245 (5)		9050A		1	MJV	08/26/16 16:01	umhos/cm	CH62613
Corrosivity (pH)	7.78 (N/A)		9045		1	JLK	08/24/16 20:33	S.U.	CH62433
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.0 °C.								
Flashpoint	> 200 (N/A)		1010		1	MJV	08/25/16 12:30	°F	CH62505
Reactive Cyanide	ND (2.0)		7.3.3.2		1	CRR	08/24/16 11:15	mg/kg	CH62418
Reactive Sulfide	ND (2.0)		7.3.4.1		1	CRR	08/24/16 11:15	mg/kg	CH62418



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	3.09 (1.91)		6010C		1	KJK	08/26/16 3:53	2.7	100	CH62416
Barium	25.6 (1.91)		6010C		1	KJK	08/26/16 3:53	2.7	100	CH62416
Cadmium	ND (0.38)		6010C		1	KJK	08/26/16 3:53	2.7	100	CH62416
Chromium	9.39 (0.76)		6010C		1	KJK	08/26/16 3:53	2.7	100	CH62416
Lead	499 (3.82)		6010C		1	KJK	08/26/16 3:53	2.7	100	CH62416
Mercury	ND (0.033)		7471B		1	BJV	08/24/16 15:38	0.62	40	CH62415
Selenium	ND (0.38)		6020A		20	NAR	08/25/16 14:26	2.7	100	CH62416
Silver	ND (0.38)		6010C		1	KJK	08/26/16 3:53	2.7	100	CH62416



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 21.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,1,1-Trichloroethane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,1,2,2-Tetrachloroethane	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,1,2-Trichloroethane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,1-Dichloroethane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,1-Dichloroethene	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,1-Dichloropropene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2,3-Trichlorobenzene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2,3-Trichloropropane	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2,4-Trichlorobenzene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2,4-Trimethylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2-Dibromo-3-Chloropropane	ND (0.737)	0.147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2-Dibromoethane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2-Dichlorobenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2-Dichloroethane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,2-Dichloropropane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,3,5-Trimethylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,3-Dichlorobenzene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,3-Dichloropropane	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,4-Dichlorobenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
1,4-Dioxane - Screen	ND (29.5)	28.0	8260B		1	08/25/16 19:37	CZH0491	CH62529
1-Chlorohexane	ND (0.147)	0.0590	8260B		1	08/25/16 19:37	CZH0491	CH62529
2,2-Dichloropropane	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
2-Butanone	ND (0.737)	0.501	8260B		1	08/25/16 19:37	CZH0491	CH62529
2-Chlorotoluene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
2-Hexanone	ND (0.737)	0.221	8260B		1	08/25/16 19:37	CZH0491	CH62529
4-Chlorotoluene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
4-Isopropyltoluene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
4-Methyl-2-Pentanone	ND (0.737)	0.236	8260B		1	08/25/16 19:37	CZH0491	CH62529
Acetone	ND (0.737)	0.398	8260B		1	08/25/16 19:37	CZH0491	CH62529
Benzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Bromobenzene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 21.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
Bromodichloromethane	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Bromoform	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Bromomethane	ND (0.147)	0.0590	8260B		1	08/25/16 19:37	CZH0491	CH62529
Carbon Disulfide	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Carbon Tetrachloride	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Chlorobenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Chloroethane	ND (0.147)	0.0590	8260B		1	08/25/16 19:37	CZH0491	CH62529
Chloroform	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Chloromethane	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
cis-1,2-Dichloroethene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
cis-1,3-Dichloropropene	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
Dibromochloromethane	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Dibromomethane	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
Dichlorodifluoromethane	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
Diethyl Ether	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
Di-isopropyl ether	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Ethyl tertiary-butyl ether	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Ethylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Hexachlorobutadiene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Isopropylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Methyl tert-Butyl Ether	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
Methylene Chloride	ND (0.295)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Naphthalene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
n-Butylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
n-Propylbenzene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
sec-Butylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Styrene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
tert-Butylbenzene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Tertiary-amyl methyl ether	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Tetrachloroethene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Tetrahydrofuran	ND (0.737)	0.236	8260B		1	08/25/16 19:37	CZH0491	CH62529



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 21.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
trans-1,2-Dichloroethene	ND (0.147)	0.0442	8260B		1	08/25/16 19:37	CZH0491	CH62529
trans-1,3-Dichloropropene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Trichloroethene	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Trichlorofluoromethane	ND (0.147)	0.0590	8260B		1	08/25/16 19:37	CZH0491	CH62529
Vinyl Acetate	ND (0.147)	0.0737	8260B		1	08/25/16 19:37	CZH0491	CH62529
Vinyl Chloride	ND (0.147)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Xylene O	ND (0.147)	0.0147	8260B		1	08/25/16 19:37	CZH0491	CH62529
Xylene P,M	ND (0.295)	0.0295	8260B		1	08/25/16 19:37	CZH0491	CH62529
Xylenes (Total)	ND (0.295)		8260B		1	08/25/16 19:37		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>88 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>84 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>88 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 20.5
Final Volume: 5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/25/16 15:11

8081B Organochlorine Pesticides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
4,4'-DDD	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
4,4'-DDE [2C]	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
4,4'-DDT [2C]	0.0077 (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Aldrin	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
alpha-BHC	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
alpha-Chlordane	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
beta-BHC	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Chlordane (Total)	ND (0.0302)		8081B		1	08/27/16 1:12	CZH0501	CH62945
delta-BHC	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Dieldrin	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Endosulfan I	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Endosulfan II	LC, P 0.0031 (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Endosulfan Sulfate	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Endrin	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Endrin Aldehyde	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Endrin Ketone	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
gamma-BHC (Lindane)	ND (0.0015)		8081B		1	08/27/16 1:12	CZH0501	CH62945
gamma-Chlordane	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Heptachlor	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Heptachlor Epoxide	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Hexachlorobenzene	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Methoxychlor	ND (0.0025)		8081B		1	08/27/16 1:12	CZH0501	CH62945
Toxaphene	ND (0.126)		8081B		1	08/27/16 1:12	CZH0501	CH62945

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	46 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	57 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	65 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	81 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ML
Prepared: 8/24/16 16:53

8082A Polychlorinated Biphenyls (PCB)

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1221	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1232	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1242	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1248	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1254	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1260	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1262	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403
Aroclor 1268	ND (0.0510)		8082A		1	08/25/16 20:50		CH62403

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	61 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	60 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	72 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	79 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 20.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 8/24/16 12:28

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	1060 (383)		8100M		10	08/25/16 18:31	CZH0487	CH62313
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		99 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 10.1
Final Volume: 4
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: VSC
Prepared: 8/24/16 13:10

8151A Chlorinated Herbicides

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
2,4,5-T	ND (0.010)		8151A		1	08/26/16 18:06	CZH0456	CH62424
2,4,5-TP (Silvex)	ND (0.010)		8151A		1	08/26/16 18:06	CZH0456	CH62424
2,4-D	ND (0.192)		8151A		1	08/26/16 18:06	CZH0456	CH62424
2,4-DB	ND (0.194)		8151A		1	08/26/16 18:06	CZH0456	CH62424
Dalapon	ND (0.186)		8151A		1	08/26/16 18:06	CZH0456	CH62424
Dicamba	ND (0.010)		8151A		1	08/26/16 18:06	CZH0456	CH62424
Dichlorprop	ND (0.192)		8151A		1	08/26/16 18:06	CZH0456	CH62424
Dinoseb	ND (0.194)		8151A		1	08/26/16 18:06	CZH0456	CH62424
MCPA [2C]	ND (19.0)		8151A		1	08/26/16 18:06	CZH0456	CH62424
MCPP	ND (19.2)		8151A		1	08/26/16 18:06	CZH0456	CH62424

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: DCAA</i>	83 %		30-150
<i>Surrogate: DCAA [2C]</i>	73 %		30-150



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
1,2,4-Trichlorobenzene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
1,2-Dichlorobenzene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
1,3-Dichlorobenzene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
1,4-Dichlorobenzene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,3,4,6-Tetrachlorophenol	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,4,5-Trichlorophenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,4,6-Trichlorophenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,4-Dichlorophenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,4-Dimethylphenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,4-Dinitrophenol	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,4-Dinitrotoluene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2,6-Dinitrotoluene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2-Chloronaphthalene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2-Chlorophenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2-Methylnaphthalene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2-Methylphenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2-Nitroaniline	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
2-Nitrophenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
3,3'-Dichlorobenzidine	ND (1.45)		8270D		2	08/26/16 17:30	CZH0495	CH62407
3+4-Methylphenol	ND (1.45)		8270D		2	08/26/16 17:30	CZH0495	CH62407
3-Nitroaniline	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4,6-Dinitro-2-Methylphenol	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4-Bromophenyl-phenylether	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4-Chloro-3-Methylphenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4-Chloroaniline	ND (1.45)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4-Chloro-phenyl-phenyl ether	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4-Nitroaniline	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
4-Nitrophenol	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Acenaphthene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Acenaphthylene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Acetophenone	ND (1.45)		8270D		2	08/26/16 17:30	CZH0495	CH62407



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (1.45)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Anthracene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Azobenzene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzo(a)anthracene	0.820 (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzo(a)pyrene	0.977 (0.364)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzo(b)fluoranthene	1.47 (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzo(g,h,i)perylene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzo(k)fluoranthene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzoic Acid	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Benzyl Alcohol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
bis(2-Chloroethoxy)methane	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
bis(2-Chloroethyl)ether	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
bis(2-chloroisopropyl)Ether	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
bis(2-Ethylhexyl)phthalate	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Butylbenzylphthalate	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Carbazole	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Chrysene	0.980 (0.364)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Dibenzo(a,h)Anthracene	ND (0.364)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Dibenzofuran	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Diethylphthalate	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Dimethylphthalate	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Di-n-butylphthalate	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Di-n-octylphthalate	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Fluoranthene	1.99 (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Fluorene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Hexachlorobenzene	ND (0.364)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Hexachlorobutadiene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Hexachlorocyclopentadiene	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Hexachloroethane	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Indeno(1,2,3-cd)Pyrene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Isophorone	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Naphthalene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97
Initial Volume: 14.2
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: IBM
Prepared: 8/24/16 15:17

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
N-Nitrosodimethylamine	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
N-Nitroso-Di-n-Propylamine	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
N-nitrosodiphenylamine	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Pentachlorophenol	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Phenanthrene	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Phenol	ND (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Pyrene	1.19 (0.725)		8270D		2	08/26/16 17:30	CZH0495	CH62407
Pyridine	ND (3.64)		8270D		2	08/26/16 17:30	CZH0495	CH62407

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	51 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	61 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	63 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	61 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	62 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	59 %		30-130
<i>Surrogate: Phenol-d6</i>	69 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	59 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: 97

ESS Laboratory Work Order: 1608657
ESS Laboratory Sample ID: 1608657-03
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Conductivity	WL 259 (5)		9050A		1	MJV	08/26/16 16:01	umhos/cm	CH62613
Corrosivity (pH)	8.37 (N/A)		9045		1	JLK	08/24/16 20:33	S.U.	CH62433
Corrosivity (pH) Sample Temp	Soil pH measured in water at 23.0 °C.								
Flashpoint	> 200 (N/A)		1010		1	MJV	08/25/16 12:30	°F	CH62505
Reactive Cyanide	ND (2.0)		7.3.3.2		1	CRR	08/24/16 11:15	mg/kg	CH62418
Reactive Sulfide	ND (2.0)		7.3.4.1		1	CRR	08/24/16 11:15	mg/kg	CH62418



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CH62415 - 7471B

Blank

Mercury ND 0.033 mg/kg wet

LCS

Mercury 16.4 1.71 mg/kg wet 15.90 103 80-120

LCS Dup

Mercury 16.3 1.74 mg/kg wet 15.90 103 80-120 0.5 20

Batch CH62416 - 3050B

Blank

Arsenic ND 2.50 mg/kg wet
Barium ND 2.50 mg/kg wet
Cadmium ND 0.50 mg/kg wet
Chromium ND 1.00 mg/kg wet
Lead ND 5.00 mg/kg wet
Selenium ND 0.50 mg/kg wet
Silver ND 0.50 mg/kg wet

LCS

Arsenic 140 9.62 mg/kg wet 161.0 87 80-120
Barium 291 9.62 mg/kg wet 351.0 83 80-120
Cadmium 175 1.92 mg/kg wet 190.0 92 80-120
Chromium 79.6 3.85 mg/kg wet 87.90 91 80-120
Lead 129 19.2 mg/kg wet 138.0 94 80-120
Selenium 315 24.0 mg/kg wet 305.0 103 80-120
Silver 53.3 1.92 mg/kg wet 58.00 92 80-120

LCS Dup

Arsenic 142 8.93 mg/kg wet 161.0 88 80-120 1 20
Barium 317 8.93 mg/kg wet 351.0 90 80-120 9 20 D+
Cadmium 169 1.79 mg/kg wet 190.0 89 80-120 3 20
Chromium 77.0 3.57 mg/kg wet 87.90 88 80-120 3 20
Lead 127 17.9 mg/kg wet 138.0 92 80-120 1 20
Selenium 280 22.3 mg/kg wet 305.0 92 80-120 12 30
Silver 51.3 1.79 mg/kg wet 58.00 89 80-120 4 20

5035/8260B Volatile Organic Compounds / Methanol

Batch CH62529 - 5035

Blank

1,1,1,2-Tetrachloroethane ND 0.200 mg/kg wet
1,1,1-Trichloroethane ND 0.200 mg/kg wet
1,1,2,2-Tetrachloroethane ND 0.200 mg/kg wet
1,1,2-Trichloroethane ND 0.200 mg/kg wet
1,1-Dichloroethane ND 0.200 mg/kg wet
1,1-Dichloroethene ND 0.200 mg/kg wet
1,1-Dichloropropene ND 0.200 mg/kg wet
1,2,3-Trichlorobenzene ND 0.200 mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CH62529 - 5035

1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	0.894	1.00	mg/kg wet							J
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CH62529 - 5035

Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Xylenes (Total)	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	4.38		mg/kg wet	5.000		88	70-130			
Surrogate: 4-Bromofluorobenzene	4.44		mg/kg wet	5.000		89	70-130			
Surrogate: Dibromofluoromethane	4.65		mg/kg wet	5.000		93	70-130			
Surrogate: Toluene-d8	4.55		mg/kg wet	5.000		91	70-130			

LCS

1,1,1,2-Tetrachloroethane	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,1,1-Trichloroethane	1.89	0.200	mg/kg wet	2.000		95	70-130			
1,1,2,2-Tetrachloroethane	1.99	0.200	mg/kg wet	2.000		100	70-130			
1,1,2-Trichloroethane	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,1-Dichloroethane	1.88	0.200	mg/kg wet	2.000		94	70-130			
1,1-Dichloroethene	2.19	0.200	mg/kg wet	2.000		109	70-130			
1,1-Dichloropropene	1.83	0.200	mg/kg wet	2.000		92	70-130			
1,2,3-Trichlorobenzene	2.13	0.200	mg/kg wet	2.000		107	70-130			
1,2,3-Trichloropropane	1.97	0.200	mg/kg wet	2.000		99	70-130			
1,2,4-Trichlorobenzene	1.99	0.200	mg/kg wet	2.000		100	70-130			
1,2,4-Trimethylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
1,2-Dibromo-3-Chloropropane	2.04	1.00	mg/kg wet	2.000		102	70-130			
1,2-Dibromoethane	2.09	0.200	mg/kg wet	2.000		105	70-130			
1,2-Dichlorobenzene	2.14	0.200	mg/kg wet	2.000		107	70-130			
1,2-Dichloroethane	1.83	0.200	mg/kg wet	2.000		92	70-130			
1,2-Dichloropropane	1.96	0.200	mg/kg wet	2.000		98	70-130			
1,3,5-Trimethylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130			
1,3-Dichlorobenzene	2.14	0.200	mg/kg wet	2.000		107	70-130			
1,3-Dichloropropane	2.06	0.200	mg/kg wet	2.000		103	70-130			
1,4-Dichlorobenzene	2.19	0.200	mg/kg wet	2.000		109	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CH62529 - 5035

1,4-Dioxane - Screen	51.2	40.0	mg/kg wet	40.00		128	44-241			
1-Chlorohexane	1.94	0.200	mg/kg wet	2.000		97	70-130			
2,2-Dichloropropane	1.88	0.200	mg/kg wet	2.000		94	70-130			
2-Butanone	9.32	1.00	mg/kg wet	10.00		93	70-130			
2-Chlorotoluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
2-Hexanone	9.45	1.00	mg/kg wet	10.00		94	70-130			
4-Chlorotoluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
4-Isopropyltoluene	2.04	0.200	mg/kg wet	2.000		102	70-130			
4-Methyl-2-Pentanone	8.81	1.00	mg/kg wet	10.00		88	70-130			
Acetone	7.89	1.00	mg/kg wet	10.00		79	70-130			
Benzene	1.85	0.200	mg/kg wet	2.000		93	70-130			
Bromobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Bromochloromethane	2.12	0.200	mg/kg wet	2.000		106	70-130			
Bromodichloromethane	1.98	0.200	mg/kg wet	2.000		99	70-130			
Bromoform	1.71	0.200	mg/kg wet	2.000		86	70-130			
Bromomethane	2.17	0.200	mg/kg wet	2.000		109	70-130			
Carbon Disulfide	1.93	0.200	mg/kg wet	2.000		96	70-130			
Carbon Tetrachloride	1.92	0.200	mg/kg wet	2.000		96	70-130			
Chlorobenzene	2.09	0.200	mg/kg wet	2.000		105	70-130			
Chloroethane	1.85	0.200	mg/kg wet	2.000		92	70-130			
Chloroform	1.89	0.200	mg/kg wet	2.000		95	70-130			
Chloromethane	1.70	0.200	mg/kg wet	2.000		85	70-130			
cis-1,2-Dichloroethene	1.95	0.200	mg/kg wet	2.000		98	70-130			
cis-1,3-Dichloropropene	1.95	0.200	mg/kg wet	2.000		97	70-130			
Dibromochloromethane	2.14	0.200	mg/kg wet	2.000		107	70-130			
Dibromomethane	1.81	0.200	mg/kg wet	2.000		91	70-130			
Dichlorodifluoromethane	2.09	0.200	mg/kg wet	2.000		105	70-130			
Diethyl Ether	1.72	0.200	mg/kg wet	2.000		86	70-130			
Di-isopropyl ether	1.85	0.200	mg/kg wet	2.000		92	70-130			
Ethyl tertiary-butyl ether	1.81	0.200	mg/kg wet	2.000		90	70-130			
Ethylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
Hexachlorobutadiene	2.09	0.200	mg/kg wet	2.000		105	70-130			
Isopropylbenzene	2.01	0.200	mg/kg wet	2.000		101	70-130			
Methyl tert-Butyl Ether	2.00	0.200	mg/kg wet	2.000		100	70-130			
Methylene Chloride	1.96	0.400	mg/kg wet	2.000		98	70-130			
Naphthalene	2.18	0.200	mg/kg wet	2.000		109	70-130			
n-Butylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130			
n-Propylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
sec-Butylbenzene	2.09	0.200	mg/kg wet	2.000		104	70-130			
Styrene	2.00	0.200	mg/kg wet	2.000		100	70-130			
tert-Butylbenzene	2.13	0.200	mg/kg wet	2.000		107	70-130			
Tertiary-amyl methyl ether	1.90	0.200	mg/kg wet	2.000		95	70-130			
Tetrachloroethene	1.56	0.200	mg/kg wet	2.000		78	70-130			
Tetrahydrofuran	1.83	1.00	mg/kg wet	2.000		92	70-130			
Toluene	1.92	0.200	mg/kg wet	2.000		96	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CH62529 - 5035

trans-1,2-Dichloroethane	1.78	0.200	mg/kg wet	2.000		89	70-130			
trans-1,3-Dichloropropene	1.66	0.200	mg/kg wet	2.000		83	70-130			
Trichloroethene	1.74	0.200	mg/kg wet	2.000		87	70-130			
Vinyl Acetate	1.81	0.200	mg/kg wet	2.000		91	70-130			
Vinyl Chloride	1.83	0.200	mg/kg wet	2.000		92	70-130			
Xylene O	2.12	0.200	mg/kg wet	2.000		106	70-130			
Xylene P,M	4.16	0.400	mg/kg wet	4.000		104	70-130			
Xylenes (Total)	6.28	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	4.41		mg/kg wet	5.000		88	70-130			
Surrogate: 4-Bromofluorobenzene	4.97		mg/kg wet	5.000		99	70-130			
Surrogate: Dibromofluoromethane	4.88		mg/kg wet	5.000		98	70-130			
Surrogate: Toluene-d8	5.05		mg/kg wet	5.000		101	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	2.12	0.200	mg/kg wet	2.000		106	70-130	3	25	
1,1,1-Trichloroethane	1.99	0.200	mg/kg wet	2.000		99	70-130	5	25	
1,1,2,2-Tetrachloroethane	1.99	0.200	mg/kg wet	2.000		99	70-130	0.3	25	
1,1,2-Trichloroethane	1.82	0.200	mg/kg wet	2.000		91	70-130	4	25	
1,1-Dichloroethane	1.98	0.200	mg/kg wet	2.000		99	70-130	5	25	
1,1-Dichloroethene	2.01	0.200	mg/kg wet	2.000		100	70-130	8	25	
1,1-Dichloropropene	1.84	0.200	mg/kg wet	2.000		92	70-130	0.8	25	
1,2,3-Trichlorobenzene	2.14	0.200	mg/kg wet	2.000		107	70-130	0.5	25	
1,2,3-Trichloropropane	1.99	0.200	mg/kg wet	2.000		99	70-130	0.8	25	
1,2,4-Trichlorobenzene	2.03	0.200	mg/kg wet	2.000		102	70-130	2	25	
1,2,4-Trimethylbenzene	2.07	0.200	mg/kg wet	2.000		103	70-130	8	25	
1,2-Dibromo-3-Chloropropane	1.78	1.00	mg/kg wet	2.000		89	70-130	14	25	
1,2-Dibromoethane	1.93	0.200	mg/kg wet	2.000		97	70-130	8	25	
1,2-Dichlorobenzene	2.21	0.200	mg/kg wet	2.000		110	70-130	3	25	
1,2-Dichloroethane	1.97	0.200	mg/kg wet	2.000		98	70-130	7	25	
1,2-Dichloropropane	1.88	0.200	mg/kg wet	2.000		94	70-130	4	25	
1,3,5-Trimethylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130	7	25	
1,3-Dichlorobenzene	2.22	0.200	mg/kg wet	2.000		111	70-130	4	25	
1,3-Dichloropropane	1.93	0.200	mg/kg wet	2.000		96	70-130	7	25	
1,4-Dichlorobenzene	2.24	0.200	mg/kg wet	2.000		112	70-130	3	25	
1,4-Dioxane - Screen	46.3	40.0	mg/kg wet	40.00		116	44-241	10	200	
1-Chlorohexane	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	
2,2-Dichloropropane	1.82	0.200	mg/kg wet	2.000		91	70-130	3	25	
2-Butanone	8.90	1.00	mg/kg wet	10.00		89	70-130	5	25	
2-Chlorotoluene	2.12	0.200	mg/kg wet	2.000		106	70-130	5	25	
2-Hexanone	8.67	1.00	mg/kg wet	10.00		87	70-130	9	25	
4-Chlorotoluene	2.17	0.200	mg/kg wet	2.000		109	70-130	8	25	
4-Isopropyltoluene	2.07	0.200	mg/kg wet	2.000		104	70-130	2	25	
4-Methyl-2-Pentanone	8.51	1.00	mg/kg wet	10.00		85	70-130	3	25	
Acetone	8.39	1.00	mg/kg wet	10.00		84	70-130	6	25	
Benzene	1.96	0.200	mg/kg wet	2.000		98	70-130	6	25	
Bromobenzene	2.03	0.200	mg/kg wet	2.000		101	70-130	3	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CH62529 - 5035										
Bromochloromethane	2.06	0.200	mg/kg wet	2.000		103	70-130	3	25	
Bromodichloromethane	2.06	0.200	mg/kg wet	2.000		103	70-130	4	25	
Bromoform	1.57	0.200	mg/kg wet	2.000		78	70-130	9	25	
Bromomethane	2.22	0.200	mg/kg wet	2.000		111	70-130	2	25	
Carbon Disulfide	2.01	0.200	mg/kg wet	2.000		101	70-130	4	25	
Carbon Tetrachloride	1.94	0.200	mg/kg wet	2.000		97	70-130	0.8	25	
Chlorobenzene	2.18	0.200	mg/kg wet	2.000		109	70-130	4	25	
Chloroethane	1.76	0.200	mg/kg wet	2.000		88	70-130	5	25	
Chloroform	1.89	0.200	mg/kg wet	2.000		94	70-130	0.3	25	
Chloromethane	1.89	0.200	mg/kg wet	2.000		94	70-130	10	25	
cis-1,2-Dichloroethene	2.04	0.200	mg/kg wet	2.000		102	70-130	4	25	
cis-1,3-Dichloropropene	2.02	0.200	mg/kg wet	2.000		101	70-130	4	25	
Dibromochloromethane	2.09	0.200	mg/kg wet	2.000		104	70-130	3	25	
Dibromomethane	1.91	0.200	mg/kg wet	2.000		95	70-130	5	25	
Dichlorodifluoromethane	2.12	0.200	mg/kg wet	2.000		106	70-130	1	25	
Diethyl Ether	1.97	0.200	mg/kg wet	2.000		98	70-130	13	25	
Di-isopropyl ether	1.93	0.200	mg/kg wet	2.000		97	70-130	4	25	
Ethyl tertiary-butyl ether	1.86	0.200	mg/kg wet	2.000		93	70-130	3	25	
Ethylbenzene	1.99	0.200	mg/kg wet	2.000		100	70-130	2	25	
Hexachlorobutadiene	1.99	0.200	mg/kg wet	2.000		100	70-130	5	25	
Isopropylbenzene	2.20	0.200	mg/kg wet	2.000		110	70-130	9	25	
Methyl tert-Butyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130	2	25	
Methylene Chloride	2.11	0.400	mg/kg wet	2.000		106	70-130	7	25	
Naphthalene	2.04	0.200	mg/kg wet	2.000		102	70-130	7	25	
n-Butylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130	3	25	
n-Propylbenzene	2.12	0.200	mg/kg wet	2.000		106	70-130	6	25	
sec-Butylbenzene	2.23	0.200	mg/kg wet	2.000		112	70-130	7	25	
Styrene	1.91	0.200	mg/kg wet	2.000		96	70-130	5	25	
tert-Butylbenzene	2.18	0.200	mg/kg wet	2.000		109	70-130	2	25	
Tertiary-amyl methyl ether	1.98	0.200	mg/kg wet	2.000		99	70-130	4	25	
Tetrachloroethene	1.55	0.200	mg/kg wet	2.000		77	70-130	0.8	25	
Tetrahydrofuran	1.81	1.00	mg/kg wet	2.000		90	70-130	1	25	
Toluene	1.98	0.200	mg/kg wet	2.000		99	70-130	3	25	
trans-1,2-Dichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130	13	25	
trans-1,3-Dichloropropene	1.64	0.200	mg/kg wet	2.000		82	70-130	1	25	
Trichloroethene	1.72	0.200	mg/kg wet	2.000		86	70-130	1	25	
Vinyl Acetate	1.74	0.200	mg/kg wet	2.000		87	70-130	4	25	
Vinyl Chloride	2.01	0.200	mg/kg wet	2.000		101	70-130	9	25	
Xylene O	2.04	0.200	mg/kg wet	2.000		102	70-130	4	25	
Xylene P,M	4.23	0.400	mg/kg wet	4.000		106	70-130	2	25	
Xylenes (Total)	6.27	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	4.64		mg/kg wet	5.000		93	70-130			
Surrogate: 4-Bromofluorobenzene	4.92		mg/kg wet	5.000		98	70-130			
Surrogate: Dibromofluoromethane	4.92		mg/kg wet	5.000		98	70-130			
Surrogate: Toluene-d8	5.08		mg/kg wet	5.000		102	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CH62945 - 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	0.0300	mg/kg wet							
Chlordane (Total) [2C]	ND	0.0300	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 Aldehyde	ND	0.0025	mg/kg wet							
Endrin Aldehyde [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							



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CH62945 - 3546

Toxaphene	ND	0.125	mg/kg wet							
Toxaphene [2C]	ND	0.125	mg/kg wet							
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.0115</i>		mg/kg wet	<i>0.01250</i>		<i>92</i>	<i>30-150</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>0.0117</i>		mg/kg wet	<i>0.01250</i>		<i>93</i>	<i>30-150</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>0.0115</i>		mg/kg wet	<i>0.01250</i>		<i>92</i>	<i>30-150</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>0.0130</i>		mg/kg wet	<i>0.01250</i>		<i>104</i>	<i>30-150</i>			

LCS

4,4'-DDD	0.0139	0.0025	mg/kg wet	0.01250		111	40-140			
4,4'-DDD [2C]	0.0133	0.0025	mg/kg wet	0.01250		106	40-140			
4,4'-DDE	0.0142	0.0025	mg/kg wet	0.01250		114	40-140			
4,4'-DDE [2C]	0.0135	0.0025	mg/kg wet	0.01250		108	40-140			
4,4'-DDT	0.0146	0.0025	mg/kg wet	0.01250		117	40-140			
4,4'-DDT [2C]	0.0144	0.0025	mg/kg wet	0.01250		115	40-140			
Aldrin	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Aldrin [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
alpha-BHC	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
alpha-BHC [2C]	0.0131	0.0025	mg/kg wet	0.01250		105	40-140			
alpha-Chlordane	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
alpha-Chlordane [2C]	0.0127	0.0025	mg/kg wet	0.01250		101	40-140			
beta-BHC	0.0128	0.0025	mg/kg wet	0.01250		102	40-140			
beta-BHC [2C]	0.0132	0.0025	mg/kg wet	0.01250		105	40-140			
delta-BHC	0.0111	0.0025	mg/kg wet	0.01250		88	40-140			
delta-BHC [2C]	0.0123	0.0025	mg/kg wet	0.01250		98	40-140			
Dieldrin	0.0135	0.0025	mg/kg wet	0.01250		108	40-140			
Dieldrin [2C]	0.0137	0.0025	mg/kg wet	0.01250		109	40-140			
Endosulfan I	0.0120	0.0025	mg/kg wet	0.01250		96	40-140			
Endosulfan I [2C]	0.0127	0.0025	mg/kg wet	0.01250		102	40-140			
Endosulfan II	0.0124	0.0025	mg/kg wet	0.01250		99	40-140			
Endosulfan II [2C]	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Endosulfan Sulfate	0.0122	0.0025	mg/kg wet	0.01250		98	40-140			
Endosulfan Sulfate [2C]	0.0127	0.0025	mg/kg wet	0.01250		101	40-140			
Endrin	0.0131	0.0025	mg/kg wet	0.01250		105	40-140			
Endrin [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140			
Endrin Aldehyde	0.0098	0.0025	mg/kg wet	0.01250		78	40-140			
Endrin Aldehyde [2C]	0.0100	0.0025	mg/kg wet	0.01250		80	40-140			
Endrin Ketone	0.0126	0.0025	mg/kg wet	0.01250		100	40-140			
Endrin Ketone [2C]	0.0128	0.0025	mg/kg wet	0.01250		103	40-140			
gamma-BHC (Lindane)	0.0123	0.0015	mg/kg wet	0.01250		99	40-140			
gamma-BHC (Lindane) [2C]	0.0129	0.0015	mg/kg wet	0.01250		104	40-140			
gamma-Chlordane	0.0126	0.0025	mg/kg wet	0.01250		101	40-140			
gamma-Chlordane [2C]	0.0130	0.0025	mg/kg wet	0.01250		104	40-140			
Heptachlor	0.0115	0.0025	mg/kg wet	0.01250		92	40-140			
Heptachlor [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140			
Heptachlor Epoxide	0.0127	0.0025	mg/kg wet	0.01250		101	40-140			



CERTIFICATE OF ANALYSIS

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Client Project ID: Allens Ave

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8081B Organochlorine Pesticides										
Batch CH62945 - 3546										
Heptachlor Epoxide [2C]	0.0133	0.0025	mg/kg wet	0.01250		106	40-140			
Hexachlorobenzene	0.0130	0.0025	mg/kg wet	0.01250		104	40-140			
Hexachlorobenzene [2C]	0.0137	0.0025	mg/kg wet	0.01250		110	40-140			
Methoxychlor	0.0140	0.0025	mg/kg wet	0.01250		112	40-140			
Methoxychlor [2C]	0.0142	0.0025	mg/kg wet	0.01250		114	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	<i>0.0125</i>		mg/kg wet	<i>0.01250</i>		<i>100</i>	<i>30-150</i>			
<i>Surrogate: Decachlorobiphenyl [2C]</i>	<i>0.0126</i>		mg/kg wet	<i>0.01250</i>		<i>101</i>	<i>30-150</i>			
<i>Surrogate: Tetrachloro-m-xylene</i>	<i>0.0120</i>		mg/kg wet	<i>0.01250</i>		<i>96</i>	<i>30-150</i>			
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	<i>0.0136</i>		mg/kg wet	<i>0.01250</i>		<i>109</i>	<i>30-150</i>			
LCS Dup										
4,4'-DDD	0.0148	0.0025	mg/kg wet	0.01250		118	40-140	6	30	
4,4'-DDD [2C]	0.0141	0.0025	mg/kg wet	0.01250		113	40-140	6	30	
4,4'-DDE	0.0151	0.0025	mg/kg wet	0.01250		121	40-140	6	30	
4,4'-DDE [2C]	0.0142	0.0025	mg/kg wet	0.01250		114	40-140	5	30	
4,4'-DDT	0.0155	0.0025	mg/kg wet	0.01250		124	40-140	6	30	
4,4'-DDT [2C]	0.0149	0.0025	mg/kg wet	0.01250		119	40-140	3	30	
Aldrin	0.0123	0.0025	mg/kg wet	0.01250		98	40-140	2	30	
Aldrin [2C]	0.0128	0.0025	mg/kg wet	0.01250		102	40-140	2	30	
alpha-BHC	0.0130	0.0025	mg/kg wet	0.01250		104	40-140	6	30	
alpha-BHC [2C]	0.0139	0.0025	mg/kg wet	0.01250		111	40-140	5	30	
alpha-Chlordane	0.0132	0.0025	mg/kg wet	0.01250		106	40-140	8	30	
alpha-Chlordane [2C]	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	7	30	
beta-BHC	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	3	30	
beta-BHC [2C]	0.0136	0.0025	mg/kg wet	0.01250		108	40-140	3	30	
delta-BHC	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	3	30	
delta-BHC [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	5	30	
Dieldrin	0.0146	0.0025	mg/kg wet	0.01250		117	40-140	8	30	
Dieldrin [2C]	0.0146	0.0025	mg/kg wet	0.01250		117	40-140	7	30	
Endosulfan I	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	9	30	
Endosulfan I [2C]	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	7	30	
Endosulfan II	0.0131	0.0025	mg/kg wet	0.01250		105	40-140	5	30	
Endosulfan II [2C]	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	5	30	
Endosulfan Sulfate	0.0129	0.0025	mg/kg wet	0.01250		103	40-140	5	30	
Endosulfan Sulfate [2C]	0.0132	0.0025	mg/kg wet	0.01250		106	40-140	4	30	
Endrin	0.0138	0.0025	mg/kg wet	0.01250		111	40-140	5	30	
Endrin [2C]	0.0137	0.0025	mg/kg wet	0.01250		110	40-140	5	30	
Endrin Aldehyde	0.0113	0.0025	mg/kg wet	0.01250		91	40-140	15	30	
Endrin Aldehyde [2C]	0.0112	0.0025	mg/kg wet	0.01250		90	40-140	12	30	
Endrin Ketone	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	6	30	
Endrin Ketone [2C]	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	4	30	
gamma-BHC (Lindane)	0.0130	0.0015	mg/kg wet	0.01250		104	40-140	5	30	
gamma-BHC (Lindane) [2C]	0.0136	0.0015	mg/kg wet	0.01250		109	40-140	5	30	
gamma-Chlordane	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	7	30	
gamma-Chlordane [2C]	0.0139	0.0025	mg/kg wet	0.01250		111	40-140	7	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8081B Organochlorine Pesticides

Batch CH62945 - 3546

Heptachlor	0.0114	0.0025	mg/kg wet	0.01250		91	40-140	1	30	
Heptachlor [2C]	0.0125	0.0025	mg/kg wet	0.01250		100	40-140	0.08	30	
Heptachlor Epoxide	0.0134	0.0025	mg/kg wet	0.01250		107	40-140	5	30	
Heptachlor Epoxide [2C]	0.0142	0.0025	mg/kg wet	0.01250		114	40-140	7	30	
Hexachlorobenzene	0.0135	0.0025	mg/kg wet	0.01250		108	40-140	4	30	
Hexachlorobenzene [2C]	0.0145	0.0025	mg/kg wet	0.01250		116	40-140	5	30	
Methoxychlor	0.0136	0.0025	mg/kg wet	0.01250		109	40-140	2	30	
Methoxychlor [2C]	0.0140	0.0025	mg/kg wet	0.01250		112	40-140	1	30	

Surrogate: Decachlorobiphenyl	0.0129		mg/kg wet	0.01250		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0129		mg/kg wet	0.01250		103	30-150			
Surrogate: Tetrachloro-m-xylene	0.0121		mg/kg wet	0.01250		97	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0138		mg/kg wet	0.01250		111	30-150			

8082A Polychlorinated Biphenyls (PCB)

Batch CH62403 - 3540C

Blank										
Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0191		mg/kg wet	0.02500		76	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0208		mg/kg wet	0.02500		83	30-150			
Surrogate: Tetrachloro-m-xylene	0.0178		mg/kg wet	0.02500		71	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0194		mg/kg wet	0.02500		78	30-150			

LCS										
Aroclor 1016	0.448	0.0500	mg/kg wet	0.5000		90	40-140			
Aroclor 1260	0.445	0.0500	mg/kg wet	0.5000		89	40-140			

Surrogate: Decachlorobiphenyl	0.0207		mg/kg wet	0.02500		83	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0229		mg/kg wet	0.02500		92	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	0.422	0.0500	mg/kg wet	0.5000		84	40-140	6	30	
Aroclor 1260	0.419	0.0500	mg/kg wet	0.5000		84	40-140	6	30	

Surrogate: Decachlorobiphenyl	0.0192		mg/kg wet	0.02500		77	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0216		mg/kg wet	0.02500		86	30-150			
Surrogate: Tetrachloro-m-xylene	0.0182		mg/kg wet	0.02500		73	30-150			



CERTIFICATE OF ANALYSIS

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8082A Polychlorinated Biphenyls (PCB)

Batch CH62403 - 3540C

Surrogate: Tetrachloro-m-xylene [2C] 0.0187 mg/kg wet 0.02500 75 30-150

Batch CH62938 - 3540C

Blank

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

Surrogate: Decachlorobiphenyl 0.0181 mg/kg wet 0.02500 72 30-150
 Surrogate: Decachlorobiphenyl [2C] 0.0199 mg/kg wet 0.02500 80 30-150
 Surrogate: Tetrachloro-m-xylene 0.0191 mg/kg wet 0.02500 76 30-150
 Surrogate: Tetrachloro-m-xylene [2C] 0.0200 mg/kg wet 0.02500 80 30-150

LCS

Aroclor 1016 0.460 0.0500 mg/kg wet 0.5000 92 40-140
 Aroclor 1260 0.456 0.0500 mg/kg wet 0.5000 91 40-140
 Surrogate: Decachlorobiphenyl 0.0212 mg/kg wet 0.02500 85 30-150
 Surrogate: Decachlorobiphenyl [2C] 0.0233 mg/kg wet 0.02500 93 30-150
 Surrogate: Tetrachloro-m-xylene 0.0206 mg/kg wet 0.02500 82 30-150
 Surrogate: Tetrachloro-m-xylene [2C] 0.0212 mg/kg wet 0.02500 85 30-150

LCS Dup

Aroclor 1016 0.442 0.0500 mg/kg wet 0.5000 88 40-140 4 30
 Aroclor 1260 0.443 0.0500 mg/kg wet 0.5000 89 40-140 3 30
 Surrogate: Decachlorobiphenyl 0.0203 mg/kg wet 0.02500 81 30-150
 Surrogate: Decachlorobiphenyl [2C] 0.0224 mg/kg wet 0.02500 90 30-150
 Surrogate: Tetrachloro-m-xylene 0.0193 mg/kg wet 0.02500 77 30-150
 Surrogate: Tetrachloro-m-xylene [2C] 0.0195 mg/kg wet 0.02500 78 30-150

8100M Total Petroleum Hydrocarbons

Batch CH62313 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							



CERTIFICATE OF ANALYSIS

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8100M Total Petroleum Hydrocarbons

Batch CH62313 - 3546

Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

<i>Surrogate: O-Terphenyl</i>	4.70		mg/kg wet	5.000		94	40-140			
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LCS

Decane (C10)	1.9	0.2	mg/kg wet	2.500		77	40-140			
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140			
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Nonadecane (C19)	2.0	0.2	mg/kg wet	2.500		82	40-140			
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		69	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		84	40-140			
Total Petroleum Hydrocarbons	27.5	37.5	mg/kg wet	35.00		78	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		89	40-140			

<i>Surrogate: O-Terphenyl</i>	4.76		mg/kg wet	5.000		95	40-140			
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LCS Dup

Decane (C10)	2.0	0.2	mg/kg wet	2.500		79	40-140	2	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	40-140	9	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		85	40-140	2	25	
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		96	40-140	7	25	
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		96	40-140	9	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		90	40-140	4	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		87	40-140	6	25	
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		70	30-140	2	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		97	40-140	9	25	
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		90	40-140	5	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		96	40-140	9	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	3	25	
Total Petroleum Hydrocarbons	29.7	37.5	mg/kg wet	35.00		85	40-140	8	25	
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		97	40-140	9	25	

<i>Surrogate: O-Terphenyl</i>	4.88		mg/kg wet	5.000		98	40-140			
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8151A Chlorinated Herbicides



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8151A Chlorinated Herbicides

Batch CH62424 - 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	0.188	mg/kg wet
2,4-D [2C]	ND	0.188	mg/kg wet
2,4-DB	ND	0.190	mg/kg wet
2,4-DB [2C]	ND	0.190	mg/kg wet
Dalapon	ND	0.182	mg/kg wet
Dalapon [2C]	ND	0.182	mg/kg wet
Dicamba	ND	0.009	mg/kg wet
Dicamba [2C]	ND	0.009	mg/kg wet
Dichlorprop	ND	0.188	mg/kg wet
Dichlorprop [2C]	ND	0.188	mg/kg wet
Dinoseb	ND	0.190	mg/kg wet
Dinoseb [2C]	ND	0.190	mg/kg wet
MCPA	ND	18.6	mg/kg wet
MCPA [2C]	ND	18.6	mg/kg wet
MCPP	ND	18.8	mg/kg wet
MCPP [2C]	ND	18.8	mg/kg wet

Surrogate: DCAA	18.0		mg/kg wet	20.00	90	30-150
Surrogate: DCAA [2C]	15.8		mg/kg wet	20.00	79	30-150

LCS

2,4,5-T	0.011	0.010	mg/kg wet	0.01900	60	40-140
2,4,5-T [2C]	0.012	0.010	mg/kg wet	0.01900	64	40-140
2,4,5-TP (Silvex)	0.012	0.010	mg/kg wet	0.01900	64	40-140
2,4,5-TP (Silvex) [2C]	0.011	0.010	mg/kg wet	0.01900	58	40-140
2,4-D	0.129	0.188	mg/kg wet	0.1880	69	40-140
2,4-D [2C]	0.136	0.188	mg/kg wet	0.1880	72	40-140
2,4-DB	0.120	0.190	mg/kg wet	0.1900	63	40-140
2,4-DB [2C]	0.108	0.190	mg/kg wet	0.1900	57	40-140
Dalapon	0.220	0.182	mg/kg wet	0.4550	48	40-140
Dalapon [2C]	0.241	0.182	mg/kg wet	0.4550	53	40-140
Dicamba	0.012	0.009	mg/kg wet	0.01880	64	40-140
Dicamba [2C]	0.012	0.009	mg/kg wet	0.01880	62	40-140
Dichlorprop	0.133	0.188	mg/kg wet	0.1880	71	40-140
Dichlorprop [2C]	0.111	0.188	mg/kg wet	0.1880	59	40-140
Dinoseb	0.012	0.190	mg/kg wet	0.09500	13	10-100
Dinoseb [2C]	0.013	0.190	mg/kg wet	0.09500	14	10-100
MCPA	14.2	18.6	mg/kg wet	18.60	77	40-140
MCPA [2C]	12.1	18.6	mg/kg wet	18.60	65	40-140
MCPP	12.3	18.8	mg/kg wet	18.80	66	40-140
MCPP [2C]	13.1	18.8	mg/kg wet	18.80	70	40-140



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8151A Chlorinated Herbicides

Batch CH62424 - 3546

Surrogate: DCAA	16.1		mg/kg wet	20.00		81	30-150			
Surrogate: DCAA [2C]	13.9		mg/kg wet	20.00		70	30-150			

LCS Dup

2,4,5-T	0.013	0.010	mg/kg wet	0.01900		66	40-140	10	30	
2,4,5-T [2C]	0.013	0.010	mg/kg wet	0.01900		70	40-140	9	30	
2,4,5-TP (Silvex)	0.013	0.010	mg/kg wet	0.01900		68	40-140	6	30	
2,4,5-TP (Silvex) [2C]	0.014	0.010	mg/kg wet	0.01900		74	40-140	24	30	
2,4-D	0.141	0.188	mg/kg wet	0.1880		75	40-140	9	30	
2,4-D [2C]	0.135	0.188	mg/kg wet	0.1880		72	40-140	1	30	
2,4-DB	0.130	0.190	mg/kg wet	0.1900		69	40-140	8	30	
2,4-DB [2C]	0.120	0.190	mg/kg wet	0.1900		63	40-140	11	30	
Dalapon	0.220	0.182	mg/kg wet	0.4550		48	40-140	0	30	
Dalapon [2C]	0.244	0.182	mg/kg wet	0.4550		54	40-140	1	30	
Dicamba	0.013	0.009	mg/kg wet	0.01880		68	40-140	6	30	
Dicamba [2C]	0.012	0.009	mg/kg wet	0.01880		66	40-140	6	30	
Dichlorprop	0.140	0.188	mg/kg wet	0.1880		74	40-140	5	30	
Dichlorprop [2C]	0.164	0.188	mg/kg wet	0.1880		87	40-140	39	30	D+
Dinoseb	0.010	0.190	mg/kg wet	0.09500		10	10-100	21	30	
Dinoseb [2C]	0.010	0.190	mg/kg wet	0.09500		11	10-100	23	30	
MCPA	13.3	18.6	mg/kg wet	18.60		72	40-140	7	30	
MCPA [2C]	12.3	18.6	mg/kg wet	18.60		66	40-140	2	30	
MCPP	12.9	18.8	mg/kg wet	18.80		69	40-140	5	30	
MCPP [2C]	13.6	18.8	mg/kg wet	18.80		73	40-140	4	30	

Surrogate: DCAA	16.7		mg/kg wet	20.00		83	30-150			
Surrogate: DCAA [2C]	14.5		mg/kg wet	20.00		73	30-150			

8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
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							
2,3,4,6-Tetrachlorophenol	ND	1.67	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

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-Nitroaniline	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
3-Nitroaniline	ND	0.333	mg/kg wet
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet
4-Chloroaniline	ND	0.667	mg/kg wet
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet
4-Nitroaniline	ND	0.333	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	0.667	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	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
Carbazole	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	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

Hexachlorocyclopentadiene	ND	1.67	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							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	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	2.56		mg/kg wet	3.333		77	30-130			
Surrogate: 2,4,6-Tribromophenol	3.73		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Chlorophenol-d4	4.20		mg/kg wet	5.000		84	30-130			
Surrogate: 2-Fluorobiphenyl	2.62		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.30		mg/kg wet	5.000		86	30-130			
Surrogate: Nitrobenzene-d5	2.87		mg/kg wet	3.333		86	30-130			
Surrogate: Phenol-d6	4.43		mg/kg wet	5.000		89	30-130			
Surrogate: p-Terphenyl-d14	3.61		mg/kg wet	3.333		108	30-130			

LCS

1,1-Biphenyl	2.41	0.333	mg/kg wet	3.333		72	40-140			
1,2,4-Trichlorobenzene	2.38	0.333	mg/kg wet	3.333		71	40-140			
1,2-Dichlorobenzene	2.39	0.333	mg/kg wet	3.333		72	40-140			
1,3-Dichlorobenzene	2.38	0.333	mg/kg wet	3.333		71	40-140			
1,4-Dichlorobenzene	2.34	0.333	mg/kg wet	3.333		70	40-140			
2,3,4,6-Tetrachlorophenol	2.36	1.67	mg/kg wet	3.333		71	30-130			
2,4,5-Trichlorophenol	2.78	0.333	mg/kg wet	3.333		84	30-130			
2,4,6-Trichlorophenol	2.61	0.333	mg/kg wet	3.333		78	30-130			
2,4-Dichlorophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
2,4-Dimethylphenol	2.68	0.333	mg/kg wet	3.333		80	30-130			
2,4-Dinitrophenol	1.88	1.67	mg/kg wet	3.333		56	30-130			
2,4-Dinitrotoluene	2.87	0.333	mg/kg wet	3.333		86	40-140			
2,6-Dinitrotoluene	2.59	0.333	mg/kg wet	3.333		78	40-140			
2-Chloronaphthalene	2.27	0.333	mg/kg wet	3.333		68	40-140			
2-Chlorophenol	2.42	0.333	mg/kg wet	3.333		73	30-130			
2-Methylnaphthalene	2.31	0.333	mg/kg wet	3.333		69	40-140			
2-Methylphenol	2.48	0.333	mg/kg wet	3.333		74	30-130			
2-Nitroaniline	2.59	0.333	mg/kg wet	3.333		78	40-140			
2-Nitrophenol	2.56	0.333	mg/kg wet	3.333		77	30-130			
3,3'-Dichlorobenzidine	2.95	0.667	mg/kg wet	3.333		88	40-140			
3+4-Methylphenol	5.13	0.667	mg/kg wet	6.667		77	30-130			
3-Nitroaniline	2.55	0.333	mg/kg wet	3.333		77	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

4,6-Dinitro-2-Methylphenol	2.41	1.67	mg/kg wet	3.333		72	30-130			
4-Bromophenyl-phenylether	2.86	0.333	mg/kg wet	3.333		86	40-140			
4-Chloro-3-Methylphenol	2.62	0.333	mg/kg wet	3.333		79	30-130			
4-Chloroaniline	2.18	0.667	mg/kg wet	3.333		65	40-140			
4-Chloro-phenyl-phenyl ether	2.71	0.333	mg/kg wet	3.333		81	40-140			
4-Nitroaniline	2.84	0.333	mg/kg wet	3.333		85	40-140			
4-Nitrophenol	2.63	1.67	mg/kg wet	3.333		79	30-130			
Acenaphthene	2.48	0.333	mg/kg wet	3.333		74	40-140			
Acenaphthylene	2.41	0.333	mg/kg wet	3.333		72	40-140			
Acetophenone	2.50	0.667	mg/kg wet	3.333		75	40-140			
Aniline	1.98	0.667	mg/kg wet	3.333		59	40-140			
Anthracene	2.80	0.333	mg/kg wet	3.333		84	40-140			
Azobenzene	2.96	0.333	mg/kg wet	3.333		89	40-140			
Benzo(a)anthracene	2.68	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	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Benzo(k)fluoranthene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Benzoic Acid	1.93	1.67	mg/kg wet	3.333		58	40-140			
Benzyl Alcohol	2.42	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethoxy)methane	2.48	0.333	mg/kg wet	3.333		74	40-140			
bis(2-Chloroethyl)ether	2.59	0.333	mg/kg wet	3.333		78	40-140			
bis(2-chloroisopropyl)Ether	2.44	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Ethylhexyl)phthalate	2.85	0.333	mg/kg wet	3.333		86	40-140			
Butylbenzylphthalate	2.68	0.333	mg/kg wet	3.333		80	40-140			
Carbazole	2.79	0.333	mg/kg wet	3.333		84	40-140			
Chrysene	2.49	0.167	mg/kg wet	3.333		75	40-140			
Dibenzo(a,h)Anthracene	2.84	0.167	mg/kg wet	3.333		85	40-140			
Dibenzofuran	2.37	0.333	mg/kg wet	3.333		71	40-140			
Diethylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Dimethylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140			
Di-n-butylphthalate	3.37	0.333	mg/kg wet	3.333		101	40-140			
Di-n-octylphthalate	2.84	0.333	mg/kg wet	3.333		85	40-140			
Fluoranthene	2.85	0.333	mg/kg wet	3.333		86	40-140			
Fluorene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Hexachlorobenzene	2.70	0.167	mg/kg wet	3.333		81	40-140			
Hexachlorobutadiene	2.31	0.333	mg/kg wet	3.333		69	40-140			
Hexachlorocyclopentadiene	1.54	1.67	mg/kg wet	3.333		46	40-140			
Hexachloroethane	2.40	0.333	mg/kg wet	3.333		72	40-140			
Indeno(1,2,3-cd)Pyrene	2.73	0.333	mg/kg wet	3.333		82	40-140			
Isophorone	2.53	0.333	mg/kg wet	3.333		76	40-140			
Naphthalene	2.44	0.333	mg/kg wet	3.333		73	40-140			
Nitrobenzene	2.55	0.333	mg/kg wet	3.333		77	40-140			
N-Nitrosodimethylamine	2.52	0.333	mg/kg wet	3.333		76	40-140			
N-Nitroso-Di-n-Propylamine	2.73	0.333	mg/kg wet	3.333		82	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

N-nitrosodiphenylamine	2.88	0.333	mg/kg wet	3.333		87	40-140			
Pentachlorophenol	2.67	1.67	mg/kg wet	3.333		80	30-130			
Phenanthrene	2.63	0.333	mg/kg wet	3.333		79	40-140			
Phenol	2.54	0.333	mg/kg wet	3.333		76	30-130			
Pyrene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Pyridine	2.13	1.67	mg/kg wet	3.333		64	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.27		mg/kg wet	3.333		68	30-130			
Surrogate: 2,4,6-Tribromophenol	4.44		mg/kg wet	5.000		89	30-130			
Surrogate: 2-Chlorophenol-d4	3.77		mg/kg wet	5.000		75	30-130			
Surrogate: 2-Fluorobiphenyl	2.41		mg/kg wet	3.333		72	30-130			
Surrogate: 2-Fluorophenol	3.80		mg/kg wet	5.000		76	30-130			
Surrogate: Nitrobenzene-d5	2.59		mg/kg wet	3.333		78	30-130			
Surrogate: Phenol-d6	4.02		mg/kg wet	5.000		80	30-130			
Surrogate: p-Terphenyl-d14	2.94		mg/kg wet	3.333		88	30-130			

LCS Dup

1,1-Biphenyl	2.73	0.333	mg/kg wet	3.333		82	40-140	12	30	
1,2,4-Trichlorobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140	12	30	
1,2-Dichlorobenzene	2.67	0.333	mg/kg wet	3.333		80	40-140	11	30	
1,3-Dichlorobenzene	2.66	0.333	mg/kg wet	3.333		80	40-140	11	30	
1,4-Dichlorobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140	11	30	
2,3,4,6-Tetrachlorophenol	2.63	1.67	mg/kg wet	3.333		79	30-130	11	30	
2,4,5-Trichlorophenol	3.13	0.333	mg/kg wet	3.333		94	30-130	12	30	
2,4,6-Trichlorophenol	2.94	0.333	mg/kg wet	3.333		88	30-130	12	30	
2,4-Dichlorophenol	2.81	0.333	mg/kg wet	3.333		84	30-130	13	30	
2,4-Dimethylphenol	3.06	0.333	mg/kg wet	3.333		92	30-130	13	30	
2,4-Dinitrophenol	2.02	1.67	mg/kg wet	3.333		61	30-130	7	30	
2,4-Dinitrotoluene	3.15	0.333	mg/kg wet	3.333		94	40-140	9	30	
2,6-Dinitrotoluene	2.93	0.333	mg/kg wet	3.333		88	40-140	13	30	
2-Chloronaphthalene	2.54	0.333	mg/kg wet	3.333		76	40-140	11	30	
2-Chlorophenol	2.73	0.333	mg/kg wet	3.333		82	30-130	12	30	
2-Methylnaphthalene	2.64	0.333	mg/kg wet	3.333		79	40-140	13	30	
2-Methylphenol	2.86	0.333	mg/kg wet	3.333		86	30-130	14	30	
2-Nitroaniline	2.88	0.333	mg/kg wet	3.333		86	40-140	11	30	
2-Nitrophenol	2.95	0.333	mg/kg wet	3.333		89	30-130	14	30	
3,3'-Dichlorobenzidine	3.38	0.667	mg/kg wet	3.333		102	40-140	14	30	
3+4-Methylphenol	5.91	0.667	mg/kg wet	6.667		89	30-130	14	30	
3-Nitroaniline	2.88	0.333	mg/kg wet	3.333		86	40-140	12	30	
4,6-Dinitro-2-Methylphenol	2.73	1.67	mg/kg wet	3.333		82	30-130	13	30	
4-Bromophenyl-phenylether	3.18	0.333	mg/kg wet	3.333		96	40-140	11	30	
4-Chloro-3-Methylphenol	2.99	0.333	mg/kg wet	3.333		90	30-130	13	30	
4-Chloroaniline	2.50	0.667	mg/kg wet	3.333		75	40-140	14	30	
4-Chloro-phenyl-phenyl ether	3.01	0.333	mg/kg wet	3.333		90	40-140	11	30	
4-Nitroaniline	3.10	0.333	mg/kg wet	3.333		93	40-140	9	30	
4-Nitrophenol	2.87	1.67	mg/kg wet	3.333		86	30-130	9	30	
Acenaphthene	2.78	0.333	mg/kg wet	3.333		83	40-140	11	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

Acenaphthylene	2.70	0.333	mg/kg wet	3.333		81	40-140	11	30	
Acetophenone	2.82	0.667	mg/kg wet	3.333		85	40-140	12	30	
Aniline	2.25	0.667	mg/kg wet	3.333		68	40-140	13	30	
Anthracene	3.09	0.333	mg/kg wet	3.333		93	40-140	10	30	
Azobenzene	3.31	0.333	mg/kg wet	3.333		99	40-140	11	30	
Benzo(a)anthracene	3.02	0.333	mg/kg wet	3.333		91	40-140	12	30	
Benzo(a)pyrene	3.22	0.167	mg/kg wet	3.333		97	40-140	13	30	
Benzo(b)fluoranthene	3.29	0.333	mg/kg wet	3.333		99	40-140	12	30	
Benzo(g,h,i)perylene	3.03	0.333	mg/kg wet	3.333		91	40-140	15	30	
Benzo(k)fluoranthene	3.25	0.333	mg/kg wet	3.333		97	40-140	13	30	
Benzoic Acid	2.21	1.67	mg/kg wet	3.333		66	40-140	13	30	
Benzyl Alcohol	2.75	0.333	mg/kg wet	3.333		83	40-140	13	30	
bis(2-Chloroethoxy)methane	2.83	0.333	mg/kg wet	3.333		85	40-140	13	30	
bis(2-Chloroethyl)ether	2.94	0.333	mg/kg wet	3.333		88	40-140	13	30	
bis(2-chloroisopropyl)Ether	2.75	0.333	mg/kg wet	3.333		82	40-140	12	30	
bis(2-Ethylhexyl)phthalate	3.16	0.333	mg/kg wet	3.333		95	40-140	10	30	
Butylbenzylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140	11	30	
Carbazole	3.12	0.333	mg/kg wet	3.333		94	40-140	11	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	12	30	
Dibenzo(a,h)Anthracene	3.27	0.167	mg/kg wet	3.333		98	40-140	14	30	
Dibenzofuran	2.66	0.333	mg/kg wet	3.333		80	40-140	12	30	
Diethylphthalate	3.38	0.333	mg/kg wet	3.333		101	40-140	11	30	
Dimethylphthalate	3.07	0.333	mg/kg wet	3.333		92	40-140	11	30	
Di-n-butylphthalate	3.78	0.333	mg/kg wet	3.333		113	40-140	11	30	
Di-n-octylphthalate	3.21	0.333	mg/kg wet	3.333		96	40-140	12	30	
Fluoranthene	3.22	0.333	mg/kg wet	3.333		96	40-140	12	30	
Fluorene	2.86	0.333	mg/kg wet	3.333		86	40-140	11	30	
Hexachlorobenzene	3.05	0.167	mg/kg wet	3.333		91	40-140	12	30	
Hexachlorobutadiene	2.62	0.333	mg/kg wet	3.333		79	40-140	12	30	
Hexachlorocyclopentadiene	1.73	1.67	mg/kg wet	3.333		52	40-140	12	30	
Hexachloroethane	2.74	0.333	mg/kg wet	3.333		82	40-140	13	30	
Indeno(1,2,3-cd)Pyrene	3.18	0.333	mg/kg wet	3.333		95	40-140	15	30	
Isophorone	2.90	0.333	mg/kg wet	3.333		87	40-140	14	30	
Naphthalene	2.76	0.333	mg/kg wet	3.333		83	40-140	13	30	
Nitrobenzene	2.86	0.333	mg/kg wet	3.333		86	40-140	11	30	
N-Nitrosodimethylamine	2.74	0.333	mg/kg wet	3.333		82	40-140	8	30	
N-Nitroso-Di-n-Propylamine	3.14	0.333	mg/kg wet	3.333		94	40-140	14	30	
N-nitrosodiphenylamine	3.22	0.333	mg/kg wet	3.333		96	40-140	11	30	
Pentachlorophenol	2.97	1.67	mg/kg wet	3.333		89	30-130	11	30	
Phenanthrene	2.88	0.333	mg/kg wet	3.333		86	40-140	9	30	
Phenol	2.90	0.333	mg/kg wet	3.333		87	30-130	13	30	
Pyrene	3.06	0.333	mg/kg wet	3.333		92	40-140	7	30	
Pyridine	2.42	1.67	mg/kg wet	3.333		73	40-140	13	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.46		mg/kg wet	3.333		74	30-130			
Surrogate: 2,4,6-Tribromophenol	4.73		mg/kg wet	5.000		95	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CH62407 - 3546

Surrogate: 2-Chlorophenol-d4	4.15		mg/kg wet	5.000		83	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.12		mg/kg wet	5.000		82	30-130			
Surrogate: Nitrobenzene-d5	2.79		mg/kg wet	3.333		84	30-130			
Surrogate: Phenol-d6	4.40		mg/kg wet	5.000		88	30-130			
Surrogate: p-Terphenyl-d14	3.07		mg/kg wet	3.333		92	30-130			

Classical Chemistry

Batch CH62418 - General Preparation

Blank

Reactive Cyanide	ND	2.0	mg/kg							
Reactive Sulfide	ND	2.0	mg/kg							

LCS

Reactive Cyanide	3.9	2.0	mg/kg	100.3		4	0.68-5.41			
Reactive Sulfide	0.2	2.0	mg/kg	10.00		2	0-44			

Batch CH62505 - General Preparation

Reference

Flashpoint	81		°F	81.00		100	97.9-102.1			
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Batch CH62613 - General Preparation

Blank

Conductivity	ND	5	umhos/cm							
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LCS

Conductivity	1440		umhos/cm	1411		102	90-110			
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CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

Notes and Definitions

- Q Calibration required quadratic regression (Q).
- > Greater than.
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- CD+ Continuing Calibration %Diff/Drift is above control limit (CD+).
- D Diluted.
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- EL Elevated Method Reporting Limits due to sample matrix (EL).
- J Reported between MDL and MRL
- # Modified result
- P Percent difference between primary and confirmation results exceeds 40% (P).
- Z-10 Soil pH measured in water at 23.0 °C.
- S- Surrogate recovery(ies) below lower control limit (S-).
- S+ Surrogate recovery(ies) above upper control limit (S+).
- SM Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
- U Analyte included in the analysis, but not detected
- WL Results obtained from a deionized water leach of the sample.
- XH Peaks found in the retention time window for MCPPE, MCPA did not confirm by GC/MS.
- Z-09 ND
- LC Lower value is used due to matrix interferences (LC).
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1608657

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/CMT

ESS Project ID: 1608657
 Date Received: 8/24/2016
 Project Due Date: 8/29/2016
 Days for Project: 3 Day

Shipped/Delivered Via: Client

- 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: 10.5 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 VOAs brought to freezer: 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	62963	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	62964	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	62965	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	62966	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	62977	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
02	62967	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	62968	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
02	62969	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	62970	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	62976	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
03	62971	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	62972	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
03	62973	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	62974	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	62975	Yes	NA	Yes	VOA Vial - Methanol	MeOH	

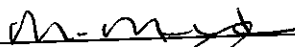
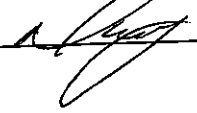
2nd Review
 Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 8/24/16 1115
 Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/CMT

ESS Project ID: 1608657
Date Received: 8/24/2016

By:  Date & Time: 8/24/16 1159
Delivered By:  8/24/16 1202

ESS Laboratory

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

Turn Time Standard Other 3 Day

Regulatory State: MA (R) CT NH NJ NY ME Other _____

Is this project for any of the following: (please circle)
 MA-MCP Navy USACE CT DEP Other _____

Co. Name Charter Contracting Company State MA
 Contact Person Ryan Miller City Boston
 Project # 8-1495 Project Name Harrison Ave Ste 412 Allens Ave
 Address 500 Harrison Ave Ste 412 PO # _____
 Zip 02118
 email: R.Miller@Charter.VS

ESS Lab # 1608657

Reporting Limits - _____

Electronic Deliverables Excel Access PDF

ESS Lab ID	Date	Collection Time	Grab-G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Analysis													
									Vol of Container	RCA & Metals	SVOC 8270	VOC 8260	TPH	PCB	Pesticide/Herbicide	PH	Fresh	Reactivity	Conductivity			
0001	8/24/16	1000	C	S	OX 1		5	AG	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0002	8/24/16	0805	C	S	H 18/21 S1		5	AG	X	X	X	X	X	X	X	X	X	X	X	X	X	X
0003	8/24/16	0800	C	S	H 18/21 S2		5	AG	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile VVOA 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 No NA: Pickup

Seals Intact Yes No NA: Technician

Cooler Temperature: 10.5° ICE W

Relinquished by: (Signature, Date & Time) Ryan Miller 8/24/16 Received by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) Ryan Miller 8/24/16 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) _____

Sampled by: Ryan Miller

Comments:

1 (White) Lab Copy
2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody

ESS Laboratory

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 # **1608657**

Turn Time Standard Other 3 Day
 Regulatory State: MA (R) 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 - _____

Electronic Deliverables Excel Access PDF

Project # 8-1495 Project Name Holder 18/21 Cupping
 Address 500 Harrison Ave Ste 412 PO # _____
 City Boston State MA Zip 02118
 Contact Person Ryan Miller email: R.Miller@chester.us

Analysis	Vol of Container	Deliverables												
		RCRA Metals	SVC 8270	VOC 8260	TPH	PCB	Pesticide/Herbicide	PH	Fresh	Reactivity	Conductivity			
		X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X	X	X	X	X
		X	X	X	X	X	X	X	X	X	X	X	X	X

Sample ID	Pres Code	# of Containers	Type of Container
OX 1		5	AG
H 18/21 S1		5	AG
H 18/21 S2		5	AG

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile VVOA 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 No NA: Pickup
 Seals Intact Yes No NA: Technician

Cooler Temperature: 10.5° ICE W
 Sampled by: Ryan Miller
 Comments:

Relinquished by: (Signature, Date & Time) Ryan Miller 8/24/16
 Received by: (Signature, Date & Time) Ryan Miller 8/24/16

Relinquished by: (Signature, Date & Time) _____
 Received by: (Signature, Date & Time) _____

Relinquished by: (Signature, Date & Time) _____
 Received by: (Signature, Date & Time) _____

1 (White) Lab Copy
 2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA



CERTIFICATE OF ANALYSIS

Kyle Merkosky
Charter Contracting Company
500 Harris Ave, Suite 4R
Boston, MA 02118

RE: Allens Ave (2-1495)
ESS Laboratory Work Order Number: 1609019

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 5:05 pm, Sep 07, 2016

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 NELAC Standards, A2LA 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: Allens Ave

ESS Laboratory Work Order: 1609019

SAMPLE RECEIPT

The following samples were received on September 01, 2016 for the analyses specified on the enclosed Chain of Custody Record.

These samples were originally received on August 24, 2016 as ESS Laboratory Work Order Number 1608657.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609019-01	OX-1	Soil	1311, 1311/6010C, 1311/8260B
1609019-02	H 18/21 S1	Soil	1311, 1311/6010C
1609019-03	H 18/21 S2	Soil	1311, 1311/6010C



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609019

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1609019

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
- 8015D - 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: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: N/A

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-01
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A TCLP

1311 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	ND (0.050)		1311/6010C		1	NAR	09/07/16 12:14	50	50	CI60613



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-01
Sample Matrix: Soil
Units: mg/L
Analyst: GEM

1311/8260B Volatile TCLP Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Benzene	ND (0.100)		1311/8260B		100	09/07/16 14:41	CZI0085	CI60732
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97 %		70-130				
<i>Surrogate: 4-Bromofluorobenzene</i>		99 %		70-130				
<i>Surrogate: Dibromofluoromethane</i>		96 %		70-130				
<i>Surrogate: Toluene-d8</i>		104 %		70-130				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-01
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 9/2/16 16:53

TCLP Extraction by 1311

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Batch</u>
Temperature (Min C)	21.3 (N/A)		1311		1	KJK	09/03/16 11:20	CI60243
Temperature (Max C)	22.1 (N/A)		1311		1	KJK	09/03/16 11:20	CI60243
Temperature (Range)	Temperature is within 23 +/-2 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: OX-1
Date Sampled: 08/24/16 10:00
Percent Solids: N/A
Initial Volume: 1
Final Volume: 1
Extraction Method: 1311/ZHE

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-01
Sample Matrix: Soil
Units: °C
Analyst: GEM
Prepared: 9/1/16 15:05

ZHE Extraction by 1311

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Batch</u>
Temperature (Min C)	21.5 (N/A)		1311		1	GEM	09/02/16 9:38	CI60739
Temperature (Max C)	22.0 (N/A)		1311		1	GEM	09/02/16 9:38	CI60739
Temperature (Range)	Temperature is within 23 +/-2 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: N/A

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-02
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A TCLP

1311 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	3.90 (0.050)		1311/6010C		1	NAR	09/07/16 12:18	50	50	CI60613



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S1
Date Sampled: 08/24/16 08:05
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-02
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 9/2/16 16:53

TCLP Extraction by 1311

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Batch</u>
Temperature (Min C)	21.3 (N/A)		1311		1	KJK	09/03/16 11:20	CI60243
Temperature (Max C)	22.1 (N/A)		1311		1	KJK	09/03/16 11:20	CI60243
Temperature (Range)	Temperature is within 23 +/-2 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: N/A

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-03
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A TCLP

1311 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	0.506 (0.050)		1311/6010C		1	NAR	09/07/16 12:23	50	50	CI60613



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: H 18/21 S2
Date Sampled: 08/24/16 08:00
Percent Solids: N/A
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1609019
ESS Laboratory Sample ID: 1609019-03
Sample Matrix: Soil
Units: °C
Analyst: KJK
Prepared: 9/2/16 16:53

TCLP Extraction by 1311

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Batch</u>
Temperature (Min C)	21.3 (N/A)		1311		1	KJK	09/03/16 11:20	CI60243
Temperature (Max C)	22.1 (N/A)		1311		1	KJK	09/03/16 11:20	CI60243
Temperature (Range)	Temperature is within 23 +/-2 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609019

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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1311 TCLP Metals

Batch CI60613 - 3005A_TCLP

Blank

Lead	ND	0.050	mg/L							
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LCS

Lead	0.506	0.050	mg/L	0.5000		101	80-120			
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LCS Dup

Lead	0.517	0.050	mg/L	0.5000		103	80-120	2	20	
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1311/8260B Volatile TCLP Compounds

Batch CI60732 - 5030B

Blank

Benzene	ND	0.0050	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0237		mg/L	0.02500		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0250		mg/L	0.02500		100	70-130			
Surrogate: Dibromofluoromethane	0.0236		mg/L	0.02500		95	70-130			
Surrogate: Toluene-d8	0.0259		mg/L	0.02500		104	70-130			

LCS

Benzene	9.59		ug/L	10.00		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0244		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0254		mg/L	0.02500		102	70-130			
Surrogate: Dibromofluoromethane	0.0247		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0262		mg/L	0.02500		105	70-130			

LCS Dup

Benzene	9.68		ug/L	10.00		97	70-130	0.9	25	
Surrogate: 1,2-Dichloroethane-d4	0.0246		mg/L	0.02500		98	70-130			
Surrogate: 4-Bromofluorobenzene	0.0262		mg/L	0.02500		105	70-130			
Surrogate: Dibromofluoromethane	0.0250		mg/L	0.02500		100	70-130			
Surrogate: Toluene-d8	0.0268		mg/L	0.02500		107	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609019

Notes and Definitions

- Z17 Temperature is within 23 +/-2 °C.
- 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1609019

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

*Project name updated per KB (CMT 8/24/16)

Relog out 9/1/16
 1609019 9/1/16
 A13

ESS Laboratory

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

Turn Time Standard Other 3 DAY
 Regulatory State: MA (R) CT NH NJ NY ME Other _____
 Is this project for any of the following: (please circle)
 MA-MCP Navy USACE CT DEP Other _____

Project # 8-1495
 Project Name Harrison Ave Site 4R
 Address 500 Harrison Ave Site 4R
 City Boston State MA Zip 02118
 Contact Person Ryan Miller email: R.Miller@Charter.VS

ESS Lab # 1600657
 Reporting Limits - _____
 Electronic Deliverables Excel Access PDF

ESS Lab ID	Date	Collection Time	Grab-G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis
0800	8/24/16	1000	C	S	OX 1		5	AG		RCMA Metals SVOC 8270 VOC 8260 TPH PCB Pesticide/Herbicide PH Flash Reactivity Conductivity
	8/24/16	0805	C	S	H 18/21 S1		5	AG		
	8/24/16	0800	C	S	H 18/21 S2		5	AG		

Container Type: P-Poly G-Glass AG-Amber Glass S-Sterile VVOA Matrix: S-Soil SD-Solid D-Sludge WW-Wastewater GW-Groundwater SW-Surface Water DN-Drinking Water O-Oil W-Wipes F-Filter

Cooler Present Yes No No NA: Pickup Internal Use Only

Seals Intact Yes No NA: Technician

Cooler Temperature: 10.5 °C

Received by: (Signature, Date & Time) [Signature] 8/24/16
 Relinquished by: (Signature, Date & Time) [Signature] 8/24/16

Received by: (Signature, Date & Time) _____
 Relinquished by: (Signature, Date & Time) _____

Comments: Sampled by: Ryan Miller

1 (White) Lab Copy
 2 (Yellow) Client Receipt

Please fax to the laboratory all changes to Chain of Custody



ENVIRONMENTAL SOIL MANAGEMENT COMPANIES
Generator Waste Profile

ESMI Customer: Charter Contracting Company, LLC. Purchase Order # 2-1495

Customer Address: 500 Harrison Ave, Suite 4R City: Boston State: MA Zip: 02118

Contact: Jon Simpson Tel: 857-246-6801 Fax: 857-246-6885

Site Contact: Ryan Miller Tel: Cell: 617-827-8664

Site Name: National Grid Site Tel:

Site Address: 642 Allens Avenue City: Providence State: RI Zip:

History of Site Use: Residential Commercial Industrial Other:

If commercial, industrial or other, please describe history of site:
Manufactured Gas Plant, propane distribution and limited bulk petroleum storage and distribution.

Event/process generating waste: Leaking UST Leaking AST Surface Spill other(describe):

Historical site use as MGP and petroleum storage.

Waste Material Description: Soil/media is contaminated with: (Check All That Apply)

NON-HAZARDOUS VIRGIN PETROLEUM CONTAMINATED SOIL
#2, #4, #6 Fuel Oil Diesel Fuel Gasoline Jet Fuel Animal/Vegetable/Tall oils White Oil
Kerosene Mixed Fuels (gas/fuel oil) Petroleum Solvent Hydraulic Oil Motor Oil

NON-HAZARDOUS NON-VIRGIN PETROLEUM CONTAMINATED SOIL
Used Oils Grease/Lubes Used Animal/Vegetable/Tall Oils Waxes Petrolatum Hydraulic Oil
Lubricating Oils Metal Working Oils Industrial Oils Used Petroleum Solvent Electrical Oil
Transformer Oil (non-PCB) Urban Fill

NON-HAZARDOUS COAL TAR or PCB CONTAMINATED SOIL
Coal Tar PCB's (<50ppm; Not PCB Remediation Waste)

NON-HAZARDOUS DREDGE CONTAMINATED SOIL (Also Identify Contaminant)
Dredge Soil associated with Upland Remediation

Are there any known or suspected past releases of contaminants other than the above listed? NO YES
If YES, Specify:

Approximate Tonnage: ~240 cy / 360 ton

Physical Characteristics: %Gravel %Sand %Clay/Silt % H2O %Debris =100%
Describe Debris:

I hereby certify, to the best of my knowledge, (a) I am a responsible official of the generator, (b) that the sampling requirements, pursuant to Env-Or 611.04(NH only), and any additional sampling required by the state of origin, has been adhered to, (c) that the information provided in the profile is correct and complete, (d) that the transport, treatment and recycling of the contaminated materials do not violate any laws or regulations of the state of origin.

Signature: Date:

Typed/Printed Name: Company:

Check One: Owner: Generator: Contractor: Consultant: Other (explain):

Acceptance of all projects is predicated on the review of this form and the analytical results of the material to be received.

ESMI of New Hampshire
67 International Drive
Loudon, New Hampshire 03307
Phone: 603.783.0228
Fax: 603.783.0104

ESMI of New York
304 Towpath Road
Fort Edward, New York 12828
Phone: 518.747.5500
Fax: 518.747.1181

ENVIRONMENTAL SOIL MANAGEMENT, INC. of NH
Pre Acceptance Analytical Plan (PAP)

MATERIAL ANALYTICAL REQUIREMENTS

Analytical requirements for material acceptance at ESMI are dependent on site history and contaminant. ESMI's analytical plan does not negate the generators responsibility to properly characterize the material prior to disposal. Deviation from prescribed sampling protocols, analytical parameters or methods may require re-sampling or re-analyzing. The following lists the minimum analytical requirements by contaminant. Additional analysis may be required after site history review.

CONTAMINANT	TPH	TOTAL VOCS ¹	TOTAL SVOCs ¹	TOTAL METALS ¹	PCBs	IGN	TOTAL SULFUR	TOTAL CYANIDE
SW-846 METHOD	GC/FID	8260	8270	RCRA 8	8080	1010	6010	9010
Virgin fuels and oils (Gasoline, diesel, #2, etc.)	X			Pb ²				
# 4 and # 6 fuel oils	X	X	X	Pb ²				
Used oils, lubricants and greases	X	X		X				
Electrical oils	X			Pb ²	X			
Coal tars, coal, pitch, tar, asphalt emulsion	X	X	X	X			X	X
Unused petroleum solvents	X	X	X	Pb ²		X		
Used Petroleum Solvents	X	X	X	X		X		
Waxes, esters, amides	X	X	X	Pb ²				
Unused animal/vegetable oil	X			Pb ²				
Used animal/vegetable oil	X			X				
Urban Fill	X	X	PAHs only	X				

¹If the total concentration of any constituent exceeds the TCLP hazardous waste level by the ratio 20:1, TCLP analysis for that constituent is required.

²Total lead analysis is required for soils originating from urban areas or where leaded gas may have been an issue.

REQUIRED SAMPLING PROTOCOL

Based on the anticipated quantity of material to be shipped to ESMI, the following number of composite samples is required:

Quantity (tons)	No. of Composite Samples
<2000	one sample every 200 tons
>2000	10 plus one additional for every 500 tons

Stockpiled soils shall be sampled by removing the first 12 inches of soil at a given sample location. Each required composite sample should be comprised of 8 grab samples. In-situ sampling shall be performed by dividing the total area to be excavated into equal sections and locating a boring or test pit as close to the center of the section as possible. Composite samples from borings shall be comprised of core samples collected at no greater than 2-foot intervals from the soil column.

ENVIRONMENTAL SOIL MANAGEMENT, INCORPORATED
ANALYTICAL ACCEPTANCE GUIDELINES

ANALYTICAL ACCEPTANCE GUIDELINES		
ANALYTICAL PARAMETER	SW-846 METHOD	ACCEPTABILITY LIMIT
Ignitability	1010	> 140°F
Corrosivity	9045	2 to 12.5
Reactivity	7.3.3.2 (cyanides) 7.3.4.1 (sulfides)	Non-reactive Non-reactive
Total Volatile Organic	8260	Compound specific limits ¹
Total Semi-volatiles Organics	8270	Compound specific limits ¹
TPH - Gasoline	M8015	30,000 ppm
TPH - All other contaminants	M8100	400,000 ppm
PCBs	8080	< 50 ppm
RCRA 8 Metals ²	Total Metals	RCRA Standards

METALS REUSE STANDARDS²		
COMPOUND	SW-846 METHOD	REUSE STANDARD
Arsenic	6020	11 ppm
Barium	6020	1000 ppm
Cadmium	6020	33 ppm
Chromium_Total	6020	1000 ppm
Chromium_Hex	6020	150 ppm
Lead	6020	400 ppm
Mercury	6020	6 ppm
Selenium	6020	180 ppm
Silver	6020	89 ppm

¹Consult ESMI for compound specific limits.

²ESMI requires total metals analysis for acceptance. If the total concentration of any constituent exceeds the TCLP hazardous waste level by a ratio 20:1 ratio, TCLP analysis for that constituent is required. The metals reuse standards are presented as guidelines for estimating acceptability. Consult the facility regarding specific concentrations.

	Sample No.		1608657-01	1608657-02	1608657-03
	Sample Date:		08/24/2016	08/24/2016	08/24/2016
	Sample Time:		10:00	08:05	08:00
	ClientSample:	ESMI	OX-1	H 18/21 S1	H 18/21 S2
VOCs					
Analyte	Units				
1,2,4-Trimethylbenzene	mg/kg dry		24.3	<0.188	<0.147
1,3,5-Trimethylbenzene	mg/kg dry		8.75	<0.188	<0.147
Acetone	mg/kg dry		0.516	<0.939	<0.737
Benzene	mg/kg dry		18.6	<0.188	<0.147
Carbon Disulfide	mg/kg dry		2.19	<0.188	<0.147
Ethylbenzene	mg/kg dry		2.81	<0.188	<0.147
Isopropylbenzene	mg/kg dry		0.071	<0.188	<0.147
Naphthalene	mg/kg dry		983	<0.188	<0.147
n-Butylbenzene	mg/kg dry		0.411	<0.188	<0.147
n-Propylbenzene	mg/kg dry		0.572	<0.188	<0.147
Styrene	mg/kg dry		0.15	<0.188	<0.147
Toluene	mg/kg dry		56.8	<0.188	<0.147
Xylene O	mg/kg dry		19.8	<0.188	<0.147
Xylene P,M	mg/kg dry		41.1	<0.375	<0.295
Xylenes (Total)	mg/kg dry		61	<0.375	<0.295
Total VOC			1220.07		
Pesticides					
4,4'-DDT	mg/kg dry		<0.0274	0.0036	-
4,4'-DDT [2C]	mg/kg dry		-	-	0.0077
Endosulfan II	mg/kg dry		<0.0274	<0.0027	0.0031
Endrin Aldehyde [2C]	mg/kg dry		0.542	-	-
PCB					
Aroclor 1248	mg/kg dry		0.0794	<0.0563	<0.051
Aroclor 1254	mg/kg dry		0.0814	<0.0563	<0.051
Total PCBs		<50	<0.1608		
TPH	mg/kg dry	<400,000	7020	<409	1060
Herbicides					
2,4,5-TP (Silvex)	mg/kg dry		0.613	<0.01	<0.01
2,4-D	mg/kg dry		27.6	<0.196	<0.192
Dicamba	mg/kg dry		13.6	<0.01	<0.01
SVOCs					
1,1-Biphenyl	mg/kg dry		4.72	<0.377	<0.725
2-Methylnaphthalene	mg/kg dry		127	<0.377	<0.725
Acenaphthene	mg/kg dry		1.62	<0.377	<0.725
Acenaphthylene	mg/kg dry		7.29	<0.377	<0.725
Acetophenone	mg/kg dry		4.4	<0.754	<1.45
Anthracene	mg/kg dry		4.36	<0.377	<0.725
Benzo(a)anthracene	mg/kg dry		8.19	0.941	0.82
Benzo(a)pyrene	mg/kg dry		4.12	1.05	0.977
Benzo(b)fluoranthene	mg/kg dry		11	1.65	1.47
Benzo(g,h,i)perylene	mg/kg dry		1.92	0.606	<0.725

Benzo(k)fluoranthene	mg/kg dry		3.29	0.648	<0.725
Chrysene	mg/kg dry		8.95	1.02	0.98
Dibenzo(a,h)Anthracene	mg/kg dry		1.29	0.243	<0.364
Fluoranthene	mg/kg dry		20.3	2.35	1.99
Fluorene	mg/kg dry		4.37	<0.377	<0.725
Indeno(1,2,3-cd)Pyrene	mg/kg dry		2.28	0.536	<0.725
Naphthalene	mg/kg dry		495	<0.377	<0.725
Phenanthrene	mg/kg dry		18.4	0.823	<0.725
Pyrene	mg/kg dry		18.7	1.74	1.19
Total SVOCs			747.2	15	17.216

Conductivity	umhos/cm		1150	245	259
Corrosivity (pH)	S.U.	2 - 12.5	2.44	7.78	8.37
Flashpoint	°F	>140	>200	>200	>200
Reactive Cyanide	mg/kg	Non-Reactive	<2	<2	<2
Reactive Sulfide	mg/kg	Non-Reactive	<2	<2	<2

Total Metals		Re-USE			
Arsenic	mg/kg dry	11	9.69	2.98	3.09
Barium	mg/kg dry	1000	37.6	51.1	25.6
Cadmium	mg/kg dry	33	<0.52	<0.47	<0.38
Chromium	mg/kg dry	1000	14	10.5	9.39
Lead	mg/kg dry	400	144	684	499
Mercury	mg/kg dry	6	0.489	0.033	<0.033
Selenium	mg/kg dry	180	<0.52	<0.47	<0.38
Silver	mg/kg dry	89	<0.52	<0.47	<0.38

TCLP

Benzene	mg/l	--	<0.1	--	--
Lead	mg/l	--	<0.05	3.9	0.506



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

SAMPLE RECEIPT

The following samples were received on November 02, 2016 for the analyses specified on the enclosed Chain of Custody Record.

Low Level VOA vials were frozen by ESS Laboratory on November 2, 2016 at 19:50

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1611085-01	Soil S1	Soil	1311, 1311/6010C, 6010C, 6020A, 7471B, 8100M, 8260B Low, 8270D, 9014, D4239



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

PROJECT NARRATIVE

8270D Semi-Volatile Organic Compounds

- CK60209-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Benzoic Acid (31% @ 40-140%), Hexachlorocyclopentadiene (38% @ 40-140%)
- CK60209-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Hexachlorobutadiene (31% @ 30%), Hexachlorocyclopentadiene (33% @ 30%)
- CZK0054-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (94% @ 80-120%), 4-Nitrophenol (110% @ 80-120%)
- CZK0054-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
bis(2-Ethylhexyl)phthalate (23% @ 20%), Butylbenzylphthalate (22% @ 20%)
- CZK0054-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
2,4,6-Tribromophenol (23% @ 20%), Benzoic Acid (47% @ 20%), Pentachlorophenol (35% @ 20%)
- CZK0054-CCV1 **Initial Calibration Verification recovery is below lower control limit (ICV-).**
Hexachlorocyclopentadiene
- CZK0127-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (105% @ 80-120%), Benzoic Acid (56% @ 80-120%), Dibenzo(a,h)Anthracene (117% @ 80-120%), Di-n-octylphthalate (107% @ 80-120%), Hexachlorocyclopentadiene (97% @ 80-120%)
- CZK0127-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Benzo(g,h,i)perylene (39% @ 20%), Indeno(1,2,3-cd)Pyrene (40% @ 20%)
- CZK0127-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzoic Acid (44% @ 20%), Pyridine (27% @ 20%)

Total Metals

- CK60217-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Selenium (141% @ 70-130%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [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: Allens Ave

ESS Laboratory Work Order: 1611085

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: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	8.20 (2.70)		6010C		1	KJK	11/09/16 6:39	2.09	100	CK60217
Barium	37.6 (2.70)		6010C		1	KJK	11/09/16 6:39	2.09	100	CK60217
Cadmium	ND (0.54)		6010C		1	KJK	11/09/16 6:39	2.09	100	CK60217
Chromium	15.9 (1.08)		6010C		1	KJK	11/09/16 6:39	2.09	100	CK60217
Lead	585 (5.40)		6010C		1	KJK	11/09/16 6:39	2.09	100	CK60217
Mercury	0.095 (0.037)		7471B		1	MJV	11/04/16 14:58	0.61	40	CK60332
Selenium	ND (0.54)		6020A		20	NAR	11/04/16 7:46	2.09	100	CK60217
Silver	ND (1.08)		6010C		1	KJK	11/09/16 6:39	2.09	100	CK60217



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A TCLP

1311 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	2.40 (0.050)		1311/6010C		1	KJK	11/11/16 21:15	50	50	CK61003



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,1,1-Trichloroethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,1,2,2-Tetrachloroethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,1,2-Trichloroethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,1-Dichloroethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,1-Dichloroethene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,1-Dichloropropene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2,3-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2,3-Trichloropropane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2,4-Trichlorobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2,4-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2-Dibromo-3-Chloropropane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2-Dibromoethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2-Dichloroethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,3,5-Trimethylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,3-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,3-Dichloropropane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,4-Dichlorobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1,4-Dioxane	ND (0.0854)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
1-Chlorohexane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
2,2-Dichloropropane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
2-Butanone	ND (0.0427)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
2-Chlorotoluene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
2-Hexanone	ND (0.0427)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
4-Chlorotoluene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
4-Isopropyltoluene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
4-Methyl-2-Pentanone	ND (0.0427)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Acetone	ND (0.0427)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Benzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Bromobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Bromodichloromethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Bromoform	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Bromomethane	ND (0.0085)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Carbon Disulfide	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Carbon Tetrachloride	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Chlorobenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Chloroethane	ND (0.0085)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Chloroform	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Chloromethane	ND (0.0085)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
cis-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
cis-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Dibromochloromethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Dibromomethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Dichlorodifluoromethane	ND (0.0085)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Diethyl Ether	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Di-isopropyl ether	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Ethyl tertiary-butyl ether	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Ethylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Hexachlorobutadiene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Isopropylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Methyl tert-Butyl Ether	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Methylene Chloride	ND (0.0214)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Naphthalene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
n-Butylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
n-Propylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
sec-Butylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Styrene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
tert-Butylbenzene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Tertiary-amyl methyl ether	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Tetrachloroethene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Tetrahydrofuran	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MEK

5035/8260B Volatile Organic Compounds / Low Level

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
trans-1,2-Dichloroethene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
trans-1,3-Dichloropropene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Trichloroethene	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Trichlorofluoromethane	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Vinyl Acetate	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Vinyl Chloride	ND (0.0085)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Xylene O	ND (0.0043)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Xylene P,M	ND (0.0085)		8260B Low		1	11/03/16 22:02	CZK0059	CK60324
Xylenes (Total)	ND (0.0085)		8260B Low		1	11/03/16 22:02		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	89 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	90 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	90 %		70-130
<i>Surrogate: Toluene-d8</i>	92 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 19.1
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: DPS
Prepared: 11/3/16 12:36

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	219 (44.3)		8100M		1	11/03/16 22:42	CZK0071	CK60312
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		<i>98 %</i>		<i>40-140</i>				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/3/16 9:55

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
1,2,4-Trichlorobenzene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
1,2-Dichlorobenzene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
1,3-Dichlorobenzene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
1,4-Dichlorobenzene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,3,4,6-Tetrachlorophenol	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,4,5-Trichlorophenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,4,6-Trichlorophenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,4-Dichlorophenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,4-Dimethylphenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,4-Dinitrophenol	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,4-Dinitrotoluene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2,6-Dinitrotoluene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2-Chloronaphthalene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2-Chlorophenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2-Methylnaphthalene	1.05 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2-Methylphenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2-Nitroaniline	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
2-Nitrophenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
3,3'-Dichlorobenzidine	ND (1.44)		8270D		2	11/08/16 11:51	CZK0127	CK60209
3+4-Methylphenol	ND (1.44)		8270D		2	11/08/16 11:51	CZK0127	CK60209
3-Nitroaniline	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4,6-Dinitro-2-Methylphenol	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4-Bromophenyl-phenylether	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4-Chloro-3-Methylphenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4-Chloroaniline	ND (1.44)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4-Chloro-phenyl-phenyl ether	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4-Nitroaniline	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
4-Nitrophenol	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Acenaphthene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Acenaphthylene	0.936 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Acetophenone	ND (1.44)		8270D		2	11/08/16 11:51	CZK0127	CK60209



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 15.7
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/3/16 9:55

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (1.44)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Anthracene	3.29 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Azobenzene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzo(a)anthracene	5.04 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzo(a)pyrene	3.45 (0.360)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzo(b)fluoranthene	5.00 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzo(g,h,i)perylene	1.05 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzo(k)fluoranthene	1.90 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzoic Acid	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Benzyl Alcohol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
bis(2-Chloroethoxy)methane	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
bis(2-Chloroethyl)ether	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
bis(2-chloroisopropyl)Ether	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
bis(2-Ethylhexyl)phthalate	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Butylbenzylphthalate	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Carbazole	2.06 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Chrysene	4.42 (0.360)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Dibenzo(a,h)Anthracene	0.691 (0.360)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Dibenzofuran	1.19 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Diethylphthalate	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Dimethylphthalate	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Di-n-butylphthalate	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Di-n-octylphthalate	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Fluoranthene	11.0 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Fluorene	2.20 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Hexachlorobenzene	ND (0.360)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Hexachlorobutadiene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Hexachlorocyclopentadiene	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Hexachloroethane	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Indeno(1,2,3-cd)Pyrene	1.11 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Isophorone	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Naphthalene	1.81 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave
 Client Sample ID: Soil S1
 Date Sampled: 11/02/16 15:00
 Percent Solids: 89
 Initial Volume: 15.7
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1611085
 ESS Laboratory Sample ID: 1611085-01
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 11/3/16 9:55

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
N-Nitrosodimethylamine	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
N-Nitroso-Di-n-Propylamine	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
N-nitrosodiphenylamine	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Pentachlorophenol	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Phenanthrene	9.69 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Phenol	ND (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Pyrene	5.80 (0.717)		8270D		2	11/08/16 11:51	CZK0127	CK60209
Pyridine	ND (3.60)		8270D		2	11/08/16 11:51	CZK0127	CK60209

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	56 %		30-130
<i>Surrogate: 2,4,6-Tribromophenol</i>	92 %		30-130
<i>Surrogate: 2-Chlorophenol-d4</i>	60 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	61 %		30-130
<i>Surrogate: 2-Fluorophenol</i>	55 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	56 %		30-130
<i>Surrogate: Phenol-d6</i>	61 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	63 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Total Cyanide	9.90 (1.09)		9014		1	EEM	11/03/16 14:25	mg/kg dry	CK60323
Sulfur	655 (100)		D4239		1	SUB	11/04/16 0:00	mg/kg	CK60734



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Soil S1
Date Sampled: 11/02/16 15:00
Percent Solids: 89
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1611085
ESS Laboratory Sample ID: 1611085-01
Sample Matrix: Soil
Units: °C
Analyst: LAB
Prepared: 11/9/16 17:30

TCLP Extraction by 1311

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Batch</u>
Temperature (Min C)	19.9 (N/A)		1311		1	LAB	11/10/16 10:11	CK60926
Temperature (Max C)	23.4 (N/A)		1311		1	LAB	11/10/16 10:11	CK60926
Temperature (Range)	Temperature is not within 23 +/-2 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CK60217 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet
Barium	ND	2.50	mg/kg wet
Cadmium	ND	0.50	mg/kg wet
Chromium	ND	1.00	mg/kg wet
Lead	ND	5.00	mg/kg wet
Selenium	ND	0.50	mg/kg wet
Silver	ND	0.50	mg/kg wet

LCS

Arsenic	173	9.80	mg/kg wet	161.0	107	80-120
Barium	420	9.80	mg/kg wet	351.0	120	80-120
Cadmium	184	1.96	mg/kg wet	190.0	97	80-120
Chromium	94.8	3.92	mg/kg wet	87.90	108	80-120
Lead	149	19.6	mg/kg wet	138.0	108	80-120
Selenium	325	24.5	mg/kg wet	305.0	107	70-130
Silver	61.6	1.96	mg/kg wet	58.00	106	80-120

LCS Dup

Arsenic	162	9.62	mg/kg wet	161.0	100	80-120	6	20	
Barium	333	9.62	mg/kg wet	351.0	95	80-120	23	20	
Cadmium	172	1.92	mg/kg wet	190.0	91	80-120	7	20	
Chromium	88.4	3.85	mg/kg wet	87.90	101	80-120	7	20	
Lead	141	19.2	mg/kg wet	138.0	102	80-120	6	20	
Selenium	430	24.0	mg/kg wet	305.0	141	70-130	28	30	B+
Silver	57.1	1.92	mg/kg wet	58.00	98	80-120	8	20	

Batch CK60332 - 7471B

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	16.0	1.90	mg/kg wet	15.90	100	80-120
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LCS Dup

Mercury	16.2	1.90	mg/kg wet	15.90	102	80-120	2	20
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1311 TCLP Metals

Batch CK61003 - 3005A_TCLP

Blank

Lead	ND	0.050	mg/L
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LCS

Lead	0.460	0.050	mg/L	0.5000	92	80-120
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LCS Dup

Lead	0.472	0.050	mg/L	0.5000	94	80-120	2	20
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5035/8260B Volatile Organic Compounds / Low Level



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CK60324 - 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	0.0050	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							
1-Chlorohexane	ND	0.0050	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0500	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0500	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet							
Acetone	ND	0.0500	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							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CK60324 - 5035

Dibromochloromethane	ND	0.0050	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	0.0250	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 Acetate	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	0.0412		mg/kg wet	0.05000		82	70-130			
Surrogate: 4-Bromofluorobenzene	0.0450		mg/kg wet	0.05000		90	70-130			
Surrogate: Dibromofluoromethane	0.0436		mg/kg wet	0.05000		87	70-130			
Surrogate: Toluene-d8	0.0462		mg/kg wet	0.05000		92	70-130			

LCS

1,1,1,2-Tetrachloroethane	0.0524	0.0050	mg/kg wet	0.05000	105	70-130
1,1,1-Trichloroethane	0.0510	0.0050	mg/kg wet	0.05000	102	70-130
1,1,2,2-Tetrachloroethane	0.0494	0.0050	mg/kg wet	0.05000	99	70-130
1,1,2-Trichloroethane	0.0466	0.0050	mg/kg wet	0.05000	93	70-130
1,1-Dichloroethane	0.0445	0.0050	mg/kg wet	0.05000	89	70-130
1,1-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000	96	70-130
1,1-Dichloropropene	0.0458	0.0050	mg/kg wet	0.05000	92	70-130
1,2,3-Trichlorobenzene	0.0514	0.0050	mg/kg wet	0.05000	103	70-130
1,2,3-Trichloropropane	0.0464	0.0050	mg/kg wet	0.05000	93	70-130
1,2,4-Trichlorobenzene	0.0500	0.0050	mg/kg wet	0.05000	100	70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CK60324 - 5035

1,2,4-Trimethylbenzene	0.0452	0.0050	mg/kg wet	0.05000		90	70-130			
1,2-Dibromo-3-Chloropropane	0.0456	0.0050	mg/kg wet	0.05000		91	70-130			
1,2-Dibromoethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
1,2-Dichlorobenzene	0.0473	0.0050	mg/kg wet	0.05000		95	70-130			
1,2-Dichloroethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
1,2-Dichloropropane	0.0442	0.0050	mg/kg wet	0.05000		88	70-130			
1,3,5-Trimethylbenzene	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
1,3-Dichlorobenzene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
1,3-Dichloropropane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
1,4-Dichlorobenzene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
1,4-Dioxane	0.977	0.100	mg/kg wet	1.000		98	70-130			
1-Chlorohexane	0.0434	0.0050	mg/kg wet	0.05000		87	70-130			
2,2-Dichloropropane	0.0418	0.0050	mg/kg wet	0.05000		84	70-130			
2-Butanone	0.231	0.0500	mg/kg wet	0.2500		92	70-130			
2-Chlorotoluene	0.0444	0.0050	mg/kg wet	0.05000		89	70-130			
2-Hexanone	0.213	0.0500	mg/kg wet	0.2500		85	70-130			
4-Chlorotoluene	0.0441	0.0050	mg/kg wet	0.05000		88	70-130			
4-Isopropyltoluene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
4-Methyl-2-Pentanone	0.216	0.0500	mg/kg wet	0.2500		87	70-130			
Acetone	0.219	0.0500	mg/kg wet	0.2500		88	70-130			
Benzene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Bromobenzene	0.0494	0.0050	mg/kg wet	0.05000		99	70-130			
Bromochloromethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130			
Bromodichloromethane	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
Bromoform	0.0604	0.0050	mg/kg wet	0.05000		121	70-130			
Bromomethane	0.0517	0.0100	mg/kg wet	0.05000		103	70-130			
Carbon Disulfide	0.0460	0.0050	mg/kg wet	0.05000		92	70-130			
Carbon Tetrachloride	0.0507	0.0050	mg/kg wet	0.05000		101	70-130			
Chlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0427	0.0100	mg/kg wet	0.05000		85	70-130			
Chloroform	0.0463	0.0050	mg/kg wet	0.05000		93	70-130			
Chloromethane	0.0472	0.0100	mg/kg wet	0.05000		94	70-130			
cis-1,2-Dichloroethene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130			
cis-1,3-Dichloropropene	0.0455	0.0050	mg/kg wet	0.05000		91	70-130			
Dibromochloromethane	0.0528	0.0050	mg/kg wet	0.05000		106	70-130			
Dibromomethane	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Dichlorodifluoromethane	0.0407	0.0100	mg/kg wet	0.05000		81	70-130			
Diethyl Ether	0.0454	0.0050	mg/kg wet	0.05000		91	70-130			
Di-isopropyl ether	0.0427	0.0050	mg/kg wet	0.05000		85	70-130			
Ethyl tertiary-butyl ether	0.0403	0.0050	mg/kg wet	0.05000		81	70-130			
Ethylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Hexachlorobutadiene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130			
Isopropylbenzene	0.0381	0.0050	mg/kg wet	0.05000		76	70-130			
Methyl tert-Butyl Ether	0.0437	0.0050	mg/kg wet	0.05000		87	70-130			
Methylene Chloride	0.0475	0.0250	mg/kg wet	0.05000		95	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CK60324 - 5035

Naphthalene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
n-Butylbenzene	0.0450	0.0050	mg/kg wet	0.05000		90	70-130			
n-Propylbenzene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
sec-Butylbenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130			
Styrene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
tert-Butylbenzene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130			
Tertiary-amyl methyl ether	0.0405	0.0050	mg/kg wet	0.05000		81	70-130			
Tetrachloroethene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Tetrahydrofuran	0.0392	0.0050	mg/kg wet	0.05000		78	70-130			
Toluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130			
trans-1,2-Dichloroethene	0.0471	0.0050	mg/kg wet	0.05000		94	70-130			
trans-1,3-Dichloropropene	0.0406	0.0050	mg/kg wet	0.05000		81	70-130			
Trichloroethene	0.0458	0.0050	mg/kg wet	0.05000		92	70-130			
Trichlorofluoromethane	0.0419	0.0050	mg/kg wet	0.05000		84	70-130			
Vinyl Acetate	0.0412	0.0050	mg/kg wet	0.05000		82	70-130			
Vinyl Chloride	0.0483	0.0100	mg/kg wet	0.05000		97	70-130			
Xylene O	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Xylene P,M	0.0959	0.0100	mg/kg wet	0.1000		96	70-130			
Xylenes (Total)	0.143	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0470		mg/kg wet	0.05000		94	70-130			
Surrogate: 4-Bromofluorobenzene	0.0460		mg/kg wet	0.05000		92	70-130			
Surrogate: Dibromofluoromethane	0.0491		mg/kg wet	0.05000		98	70-130			
Surrogate: Toluene-d8	0.0462		mg/kg wet	0.05000		92	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	0.0530	0.0050	mg/kg wet	0.05000		106	70-130	1	25	
1,1,1-Trichloroethane	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	0.1	25	
1,1,2,2-Tetrachloroethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	3	25	
1,1,2-Trichloroethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
1,1-Dichloroethane	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	2	25	
1,1-Dichloroethene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	0.4	25	
1,1-Dichloropropene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
1,2,3-Trichlorobenzene	0.0529	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
1,2,3-Trichloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	2	25	
1,2,4-Trichlorobenzene	0.0509	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,2,4-Trimethylbenzene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	2	25	
1,2-Dibromo-3-Chloropropane	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	4	25	
1,2-Dibromoethane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
1,2-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
1,2-Dichloroethane	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
1,2-Dichloropropane	0.0454	0.0050	mg/kg wet	0.05000		91	70-130	3	25	
1,3,5-Trimethylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.6	25	
1,3-Dichlorobenzene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
1,3-Dichloropropane	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
1,4-Dichlorobenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	1	25	
1,4-Dioxane	1.09	0.100	mg/kg wet	1.000		109	70-130	11	20	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
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ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CK60324 - 5035

1-Chlorohexane	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	1	25	
2,2-Dichloropropane	0.0416	0.0050	mg/kg wet	0.05000		83	70-130	0.5	25	
2-Butanone	0.240	0.0500	mg/kg wet	0.2500		96	70-130	4	25	
2-Chlorotoluene	0.0447	0.0050	mg/kg wet	0.05000		89	70-130	0.6	25	
2-Hexanone	0.222	0.0500	mg/kg wet	0.2500		89	70-130	4	25	
4-Chlorotoluene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	2	25	
4-Isopropyltoluene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	0.2	25	
4-Methyl-2-Pentanone	0.225	0.0500	mg/kg wet	0.2500		90	70-130	4	25	
Acetone	0.225	0.0500	mg/kg wet	0.2500		90	70-130	3	25	
Benzene	0.0463	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Bromobenzene	0.0505	0.0050	mg/kg wet	0.05000		101	70-130	2	25	
Bromochloromethane	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
Bromodichloromethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Bromoform	0.0621	0.0050	mg/kg wet	0.05000		124	70-130	3	25	
Bromomethane	0.0508	0.0100	mg/kg wet	0.05000		102	70-130	2	25	
Carbon Disulfide	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Carbon Tetrachloride	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	0.2	25	
Chlorobenzene	0.0474	0.0050	mg/kg wet	0.05000		95	70-130	1	25	
Chloroethane	0.0419	0.0100	mg/kg wet	0.05000		84	70-130	2	25	
Chloroform	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Chloromethane	0.0471	0.0100	mg/kg wet	0.05000		94	70-130	0.2	25	
cis-1,2-Dichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
cis-1,3-Dichloropropene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Dibromochloromethane	0.0535	0.0050	mg/kg wet	0.05000		107	70-130	1	25	
Dibromomethane	0.0500	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
Dichlorodifluoromethane	0.0402	0.0100	mg/kg wet	0.05000		80	70-130	1	25	
Diethyl Ether	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Di-isopropyl ether	0.0438	0.0050	mg/kg wet	0.05000		88	70-130	3	25	
Ethyl tertiary-butyl ether	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	3	25	
Ethylbenzene	0.0462	0.0050	mg/kg wet	0.05000		92	70-130	0.1	25	
Hexachlorobutadiene	0.0514	0.0050	mg/kg wet	0.05000		103	70-130	1	25	
Isopropylbenzene	0.0381	0.0050	mg/kg wet	0.05000		76	70-130	0.05	25	
Methyl tert-Butyl Ether	0.0451	0.0050	mg/kg wet	0.05000		90	70-130	3	25	
Methylene Chloride	0.0480	0.0250	mg/kg wet	0.05000		96	70-130	1	25	
Naphthalene	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	5	25	
n-Butylbenzene	0.0453	0.0050	mg/kg wet	0.05000		91	70-130	0.5	25	
n-Propylbenzene	0.0448	0.0050	mg/kg wet	0.05000		90	70-130	0.4	25	
sec-Butylbenzene	0.0449	0.0050	mg/kg wet	0.05000		90	70-130	0.1	25	
Styrene	0.0467	0.0050	mg/kg wet	0.05000		93	70-130	0.3	25	
tert-Butylbenzene	0.0468	0.0050	mg/kg wet	0.05000		94	70-130	0.9	25	
Tertiary-amyl methyl ether	0.0416	0.0050	mg/kg wet	0.05000		83	70-130	3	25	
Tetrachloroethene	0.0488	0.0050	mg/kg wet	0.05000		98	70-130	1	25	
Tetrahydrofuran	0.0406	0.0050	mg/kg wet	0.05000		81	70-130	4	25	
Toluene	0.0470	0.0050	mg/kg wet	0.05000		94	70-130	0.8	25	
trans-1,2-Dichloroethene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	1	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Low Level

Batch CK60324 - 5035

trans-1,3-Dichloropropene	0.0420	0.0050	mg/kg wet	0.05000		84	70-130	3	25	
Trichloroethene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130	1	25	
Trichlorofluoromethane	0.0417	0.0050	mg/kg wet	0.05000		83	70-130	0.4	25	
Vinyl Acetate	0.0427	0.0050	mg/kg wet	0.05000		85	70-130	4	25	
Vinyl Chloride	0.0484	0.0100	mg/kg wet	0.05000		97	70-130	0.1	25	
Xylene O	0.0475	0.0050	mg/kg wet	0.05000		95	70-130	0.6	25	
Xylene P,M	0.0962	0.0100	mg/kg wet	0.1000		96	70-130	0.3	25	
Xylenes (Total)	0.144	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	0.0477		mg/kg wet	0.05000		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0455		mg/kg wet	0.05000		91	70-130			
Surrogate: Dibromofluoromethane	0.0490		mg/kg wet	0.05000		98	70-130			
Surrogate: Toluene-d8	0.0455		mg/kg wet	0.05000		91	70-130			

8100M Total Petroleum Hydrocarbons

Batch CK60312 - 3546

Blank										
Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	4.87		mg/kg wet	5.000		97	40-140			
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LCS										
Decane (C10)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Docosane (C22)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Dodecane (C12)	2.2	0.2	mg/kg wet	2.500		87	40-140			
Eicosane (C20)	2.5	0.2	mg/kg wet	2.500		101	40-140			
Hexacosane (C26)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		98	40-140			
Nonadecane (C19)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Nonane (C9)	1.8	0.2	mg/kg wet	2.500		73	30-140			
Octacosane (C28)	2.5	0.2	mg/kg wet	2.500		99	40-140			
Octadecane (C18)	2.4	0.2	mg/kg wet	2.500		95	40-140			
Tetracosane (C24)	2.5	0.2	mg/kg wet	2.500		100	40-140			
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		90	40-140			



CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CK60312 - 3546

Total Petroleum Hydrocarbons	39.5	37.5	mg/kg wet	35.00		113	40-140			
Triacontane (C30)	2.5	0.2	mg/kg wet	2.500		98	40-140			
<i>Surrogate: O-Terphenyl</i>	<i>5.06</i>		mg/kg wet	<i>5.000</i>		<i>101</i>	<i>40-140</i>			

LCS Dup

Decane (C10)	2.0	0.2	mg/kg wet	2.500		79	40-140	8	25	
Docosane (C22)	2.4	0.2	mg/kg wet	2.500		97	40-140	3	25	
Dodecane (C12)	2.1	0.2	mg/kg wet	2.500		83	40-140	6	25	
Eicosane (C20)	2.4	0.2	mg/kg wet	2.500		97	40-140	4	25	
Hexacosane (C26)	2.4	0.2	mg/kg wet	2.500		97	40-140	3	25	
Hexadecane (C16)	2.4	0.2	mg/kg wet	2.500		94	40-140	4	25	
Nonadecane (C19)	2.4	0.2	mg/kg wet	2.500		96	40-140	4	25	
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140	10	25	
Octacosane (C28)	2.4	0.2	mg/kg wet	2.500		95	40-140	3	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		92	40-140	3	25	
Tetracosane (C24)	2.4	0.2	mg/kg wet	2.500		96	40-140	3	25	
Tetradecane (C14)	2.2	0.2	mg/kg wet	2.500		87	40-140	3	25	
Total Petroleum Hydrocarbons	34.5	37.5	mg/kg wet	35.00		99	40-140	13	25	
Triacontane (C30)	2.4	0.2	mg/kg wet	2.500		95	40-140	4	25	
<i>Surrogate: O-Terphenyl</i>	<i>4.76</i>		mg/kg wet	<i>5.000</i>		<i>95</i>	<i>40-140</i>			

8270D Semi-Volatile Organic Compounds

Batch CK60209 - 3546

Blank

1,1-Biphenyl	ND	0.333	mg/kg wet							
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							
2,3,4,6-Tetrachlorophenol	ND	1.67	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-Nitroaniline	ND	0.333	mg/kg wet							
2-Nitrophenol	ND	0.333	mg/kg wet							
3,3'-Dichlorobenzidine	ND	0.667	mg/kg wet							



CERTIFICATE OF ANALYSIS

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Quality Control Data

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8270D Semi-Volatile Organic Compounds

Batch CK60209 - 3546

3+4-Methylphenol	ND	0.667	mg/kg wet
3-Nitroaniline	ND	0.333	mg/kg wet
4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet
4-Chloroaniline	ND	0.667	mg/kg wet
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet
4-Nitroaniline	ND	0.333	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	0.667	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	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
Carbazole	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	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK60209 - 3546

N-Nitrosodimethylamine	ND	0.333	mg/kg wet							
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet							
N-nitrosodiphenylamine	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	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2,4,6-Tribromophenol	2.03		mg/kg wet	5.000		41	30-130			
Surrogate: 2-Chlorophenol-d4	4.05		mg/kg wet	5.000		81	30-130			
Surrogate: 2-Fluorobiphenyl	2.58		mg/kg wet	3.333		78	30-130			
Surrogate: 2-Fluorophenol	3.90		mg/kg wet	5.000		78	30-130			
Surrogate: Nitrobenzene-d5	2.68		mg/kg wet	3.333		81	30-130			
Surrogate: Phenol-d6	4.07		mg/kg wet	5.000		81	30-130			
Surrogate: p-Terphenyl-d14	3.44		mg/kg wet	3.333		103	30-130			

LCS

1,1-Biphenyl	2.72	0.333	mg/kg wet	3.333		82	40-140			
1,2,4-Trichlorobenzene	2.64	0.333	mg/kg wet	3.333		79	40-140			
1,2-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
1,3-Dichlorobenzene	2.60	0.333	mg/kg wet	3.333		78	40-140			
1,4-Dichlorobenzene	2.56	0.333	mg/kg wet	3.333		77	40-140			
2,3,4,6-Tetrachlorophenol	2.32	1.67	mg/kg wet	3.333		70	30-130			
2,4,5-Trichlorophenol	2.97	0.333	mg/kg wet	3.333		89	30-130			
2,4,6-Trichlorophenol	2.83	0.333	mg/kg wet	3.333		85	30-130			
2,4-Dichlorophenol	2.72	0.333	mg/kg wet	3.333		82	30-130			
2,4-Dimethylphenol	2.58	0.333	mg/kg wet	3.333		77	30-130			
2,4-Dinitrophenol	2.31	1.67	mg/kg wet	3.333		69	30-130			
2,4-Dinitrotoluene	3.18	0.333	mg/kg wet	3.333		95	40-140			
2,6-Dinitrotoluene	2.80	0.333	mg/kg wet	3.333		84	40-140			
2-Chloronaphthalene	2.41	0.333	mg/kg wet	3.333		72	40-140			
2-Chlorophenol	2.46	0.333	mg/kg wet	3.333		74	30-130			
2-Methylnaphthalene	2.45	0.333	mg/kg wet	3.333		73	40-140			
2-Methylphenol	2.45	0.333	mg/kg wet	3.333		73	30-130			
2-Nitroaniline	2.71	0.333	mg/kg wet	3.333		81	40-140			
2-Nitrophenol	2.45	0.333	mg/kg wet	3.333		74	30-130			
3,3'-Dichlorobenzidine	2.44	0.667	mg/kg wet	3.333		73	40-140			
3+4-Methylphenol	4.85	0.667	mg/kg wet	6.667		73	30-130			
3-Nitroaniline	3.43	0.333	mg/kg wet	3.333		103	40-140			
4,6-Dinitro-2-Methylphenol	2.47	1.67	mg/kg wet	3.333		74	30-130			
4-Bromophenyl-phenylether	2.56	0.333	mg/kg wet	3.333		77	40-140			
4-Chloro-3-Methylphenol	2.70	0.333	mg/kg wet	3.333		81	30-130			
4-Chloroaniline	2.47	0.667	mg/kg wet	3.333		74	40-140			
4-Chloro-phenyl-phenyl ether	2.71	0.333	mg/kg wet	3.333		81	40-140			
4-Nitroaniline	2.76	0.333	mg/kg wet	3.333		83	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK60209 - 3546

4-Nitrophenol	2.76	1.67	mg/kg wet	3.333		83	30-130			
Acenaphthene	2.71	0.333	mg/kg wet	3.333		81	40-140			
Acenaphthylene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Acetophenone	2.49	0.667	mg/kg wet	3.333		75	40-140			
Aniline	1.98	0.667	mg/kg wet	3.333		59	40-140			
Anthracene	2.84	0.333	mg/kg wet	3.333		85	40-140			
Azobenzene	2.64	0.333	mg/kg wet	3.333		79	40-140			
Benzo(a)anthracene	2.87	0.333	mg/kg wet	3.333		86	40-140			
Benzo(a)pyrene	2.89	0.167	mg/kg wet	3.333		87	40-140			
Benzo(b)fluoranthene	2.92	0.333	mg/kg wet	3.333		88	40-140			
Benzo(g,h,i)perylene	2.74	0.333	mg/kg wet	3.333		82	40-140			
Benzo(k)fluoranthene	3.03	0.333	mg/kg wet	3.333		91	40-140			
Benzoic Acid	1.35	1.67	mg/kg wet	3.333		40	40-140			
Benzyl Alcohol	2.42	0.333	mg/kg wet	3.333		73	40-140			
bis(2-Chloroethoxy)methane	2.56	0.333	mg/kg wet	3.333		77	40-140			
bis(2-Chloroethyl)ether	2.39	0.333	mg/kg wet	3.333		72	40-140			
bis(2-chloroisopropyl)Ether	2.50	0.333	mg/kg wet	3.333		75	40-140			
bis(2-Ethylhexyl)phthalate	3.08	0.333	mg/kg wet	3.333		92	40-140			
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140			
Carbazole	2.85	0.333	mg/kg wet	3.333		85	40-140			
Chrysene	2.85	0.167	mg/kg wet	3.333		86	40-140			
Dibenzo(a,h)Anthracene	2.71	0.167	mg/kg wet	3.333		81	40-140			
Dibenzofuran	2.73	0.333	mg/kg wet	3.333		82	40-140			
Diethylphthalate	2.85	0.333	mg/kg wet	3.333		85	40-140			
Dimethylphthalate	2.72	0.333	mg/kg wet	3.333		82	40-140			
Di-n-butylphthalate	2.95	0.333	mg/kg wet	3.333		88	40-140			
Di-n-octylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140			
Fluoranthene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Fluorene	2.86	0.333	mg/kg wet	3.333		86	40-140			
Hexachlorobenzene	2.58	0.167	mg/kg wet	3.333		77	40-140			
Hexachlorobutadiene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Hexachlorocyclopentadiene	1.76	1.67	mg/kg wet	3.333		53	40-140			
Hexachloroethane	2.59	0.333	mg/kg wet	3.333		78	40-140			
Indeno(1,2,3-cd)Pyrene	2.71	0.333	mg/kg wet	3.333		81	40-140			
Isophorone	2.65	0.333	mg/kg wet	3.333		80	40-140			
Naphthalene	2.62	0.333	mg/kg wet	3.333		79	40-140			
Nitrobenzene	2.69	0.333	mg/kg wet	3.333		81	40-140			
N-Nitrosodimethylamine	2.54	0.333	mg/kg wet	3.333		76	40-140			
N-Nitroso-Di-n-Propylamine	2.54	0.333	mg/kg wet	3.333		76	40-140			
N-nitrosodiphenylamine	2.74	0.333	mg/kg wet	3.333		82	40-140			
Pentachlorophenol	2.04	1.67	mg/kg wet	3.333		61	30-130			
Phenanthrene	2.77	0.333	mg/kg wet	3.333		83	40-140			
Phenol	2.74	0.333	mg/kg wet	3.333		82	30-130			
Pyrene	2.97	0.333	mg/kg wet	3.333		89	40-140			
Pyridine	2.05	1.67	mg/kg wet	3.333		62	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK60209 - 3546

Surrogate: 1,2-Dichlorobenzene-d4	2.90		mg/kg wet	3.333		87	30-130			
Surrogate: 2,4,6-Tribromophenol	4.17		mg/kg wet	5.000		83	30-130			
Surrogate: 2-Chlorophenol-d4	4.40		mg/kg wet	5.000		88	30-130			
Surrogate: 2-Fluorobiphenyl	3.02		mg/kg wet	3.333		91	30-130			
Surrogate: 2-Fluorophenol	4.29		mg/kg wet	5.000		86	30-130			
Surrogate: Nitrobenzene-d5	3.15		mg/kg wet	3.333		95	30-130			
Surrogate: Phenol-d6	4.28		mg/kg wet	5.000		86	30-130			
Surrogate: p-Terphenyl-d14	3.21		mg/kg wet	3.333		96	30-130			

LCS Dup										
1,1-Biphenyl	2.33	0.333	mg/kg wet	3.333		70	40-140	16	30	
1,2,4-Trichlorobenzene	2.01	0.333	mg/kg wet	3.333		60	40-140	27	30	
1,2-Dichlorobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	20	30	
1,3-Dichlorobenzene	2.09	0.333	mg/kg wet	3.333		63	40-140	22	30	
1,4-Dichlorobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	21	30	
2,3,4,6-Tetrachlorophenol	2.18	1.67	mg/kg wet	3.333		65	30-130	6	30	
2,4,5-Trichlorophenol	2.74	0.333	mg/kg wet	3.333		82	30-130	8	30	
2,4,6-Trichlorophenol	2.58	0.333	mg/kg wet	3.333		77	30-130	9	30	
2,4-Dichlorophenol	2.28	0.333	mg/kg wet	3.333		68	30-130	18	30	
2,4-Dimethylphenol	2.13	0.333	mg/kg wet	3.333		64	30-130	19	30	
2,4-Dinitrophenol	1.98	1.67	mg/kg wet	3.333		59	30-130	15	30	
2,4-Dinitrotoluene	3.12	0.333	mg/kg wet	3.333		94	40-140	2	30	
2,6-Dinitrotoluene	2.66	0.333	mg/kg wet	3.333		80	40-140	5	30	
2-Chloronaphthalene	2.06	0.333	mg/kg wet	3.333		62	40-140	16	30	
2-Chlorophenol	2.10	0.333	mg/kg wet	3.333		63	30-130	16	30	
2-Methylnaphthalene	2.01	0.333	mg/kg wet	3.333		60	40-140	20	30	
2-Methylphenol	2.27	0.333	mg/kg wet	3.333		68	30-130	7	30	
2-Nitroaniline	2.58	0.333	mg/kg wet	3.333		77	40-140	5	30	
2-Nitrophenol	1.96	0.333	mg/kg wet	3.333		59	30-130	22	30	
3,3'-Dichlorobenzidine	2.20	0.667	mg/kg wet	3.333		66	40-140	10	30	
3+4-Methylphenol	4.59	0.667	mg/kg wet	6.667		69	30-130	5	30	
3-Nitroaniline	3.26	0.333	mg/kg wet	3.333		98	40-140	5	30	
4,6-Dinitro-2-Methylphenol	2.33	1.67	mg/kg wet	3.333		70	30-130	6	30	
4-Bromophenyl-phenylether	2.34	0.333	mg/kg wet	3.333		70	40-140	9	30	
4-Chloro-3-Methylphenol	2.43	0.333	mg/kg wet	3.333		73	30-130	11	30	
4-Chloroaniline	1.97	0.667	mg/kg wet	3.333		59	40-140	23	30	
4-Chloro-phenyl-phenyl ether	2.44	0.333	mg/kg wet	3.333		73	40-140	11	30	
4-Nitroaniline	2.63	0.333	mg/kg wet	3.333		79	40-140	5	30	
4-Nitrophenol	2.84	1.67	mg/kg wet	3.333		85	30-130	3	30	
Acenaphthene	2.36	0.333	mg/kg wet	3.333		71	40-140	14	30	
Acenaphthylene	2.38	0.333	mg/kg wet	3.333		71	40-140	14	30	
Acetophenone	2.23	0.667	mg/kg wet	3.333		67	40-140	11	30	
Aniline	1.71	0.667	mg/kg wet	3.333		51	40-140	15	30	
Anthracene	2.77	0.333	mg/kg wet	3.333		83	40-140	2	30	
Azobenzene	2.42	0.333	mg/kg wet	3.333		72	40-140	9	30	
Benzo(a)anthracene	2.76	0.333	mg/kg wet	3.333		83	40-140	4	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK60209 - 3546

Benzo(a)pyrene	2.88	0.167	mg/kg wet	3.333		86	40-140	0.6	30	
Benzo(b)fluoranthene	2.69	0.333	mg/kg wet	3.333		81	40-140	8	30	
Benzo(g,h,i)perylene	2.74	0.333	mg/kg wet	3.333		82	40-140	0.07	30	
Benzo(k)fluoranthene	2.89	0.333	mg/kg wet	3.333		87	40-140	5	30	
Benzoic Acid	1.04	1.67	mg/kg wet	3.333		31	40-140	26	30	B-
Benzyl Alcohol	1.97	0.333	mg/kg wet	3.333		59	40-140	20	30	
bis(2-Chloroethoxy)methane	2.05	0.333	mg/kg wet	3.333		62	40-140	22	30	
bis(2-Chloroethyl)ether	2.01	0.333	mg/kg wet	3.333		60	40-140	18	30	
bis(2-chloroisopropyl)Ether	2.17	0.333	mg/kg wet	3.333		65	40-140	14	30	
bis(2-Ethylhexyl)phthalate	3.16	0.333	mg/kg wet	3.333		95	40-140	3	30	
Butylbenzylphthalate	2.93	0.333	mg/kg wet	3.333		88	40-140	0.1	30	
Carbazole	2.84	0.333	mg/kg wet	3.333		85	40-140	0.4	30	
Chrysene	2.82	0.167	mg/kg wet	3.333		85	40-140	1	30	
Dibenzo(a,h)Anthracene	2.76	0.167	mg/kg wet	3.333		83	40-140	2	30	
Dibenzofuran	2.40	0.333	mg/kg wet	3.333		72	40-140	13	30	
Diethylphthalate	2.75	0.333	mg/kg wet	3.333		82	40-140	3	30	
Dimethylphthalate	2.60	0.333	mg/kg wet	3.333		78	40-140	5	30	
Di-n-butylphthalate	3.00	0.333	mg/kg wet	3.333		90	40-140	2	30	
Di-n-octylphthalate	2.76	0.333	mg/kg wet	3.333		83	40-140	2	30	
Fluoranthene	2.75	0.333	mg/kg wet	3.333		83	40-140	0.7	30	
Fluorene	2.61	0.333	mg/kg wet	3.333		78	40-140	9	30	
Hexachlorobenzene	2.44	0.167	mg/kg wet	3.333		73	40-140	6	30	
Hexachlorobutadiene	1.98	0.333	mg/kg wet	3.333		60	40-140	31	30	D+
Hexachlorocyclopentadiene	1.26	1.67	mg/kg wet	3.333		38	40-140	33	30	B-, D+
Hexachloroethane	2.10	0.333	mg/kg wet	3.333		63	40-140	21	30	
Indeno(1,2,3-cd)Pyrene	2.77	0.333	mg/kg wet	3.333		83	40-140	2	30	
Isophorone	2.18	0.333	mg/kg wet	3.333		65	40-140	20	30	
Naphthalene	2.05	0.333	mg/kg wet	3.333		61	40-140	24	30	
Nitrobenzene	2.10	0.333	mg/kg wet	3.333		63	40-140	25	30	
N-Nitrosodimethylamine	2.04	0.333	mg/kg wet	3.333		61	40-140	22	30	
N-Nitroso-Di-n-Propylamine	2.31	0.333	mg/kg wet	3.333		69	40-140	9	30	
N-nitrosodiphenylamine	2.59	0.333	mg/kg wet	3.333		78	40-140	5	30	
Pentachlorophenol	1.97	1.67	mg/kg wet	3.333		59	30-130	3	30	
Phenanthrene	2.67	0.333	mg/kg wet	3.333		80	40-140	4	30	
Phenol	2.53	0.333	mg/kg wet	3.333		76	30-130	8	30	
Pyrene	2.90	0.333	mg/kg wet	3.333		87	40-140	2	30	
Pyridine	1.64	1.67	mg/kg wet	3.333		49	40-140	22	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.49		mg/kg wet	3.333		75	30-130			
Surrogate: 2,4,6-Tribromophenol	3.87		mg/kg wet	5.000		77	30-130			
Surrogate: 2-Chlorophenol-d4	3.79		mg/kg wet	5.000		76	30-130			
Surrogate: 2-Fluorobiphenyl	2.55		mg/kg wet	3.333		76	30-130			
Surrogate: 2-Fluorophenol	3.65		mg/kg wet	5.000		73	30-130			
Surrogate: Nitrobenzene-d5	2.47		mg/kg wet	3.333		74	30-130			
Surrogate: Phenol-d6	3.86		mg/kg wet	5.000		77	30-130			
Surrogate: p-Terphenyl-d14	3.23		mg/kg wet	3.333		97	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Classical Chemistry

Batch CK60323 - TCN Prep

Blank

Total Cyanide	ND	1.00	mg/kg wet							
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LCS

Total Cyanide	4.96	1.00	mg/kg wet	5.015		99	90-110			
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Reference

Total Cyanide	49.6	4.90	mg/kg wet	48.40		103	36.1577-206.6 12			
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Reference

Total Cyanide	49.3	4.92	mg/kg wet	48.40		102	36.1577-206.6 12			
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CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

Notes and Definitions

- Z18 Temperature is not within 23 +/-2 °C.
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- ICV- Initial Calibration Verification recovery is below lower control limit (ICV-).
- 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+).
- B- Blank Spike recovery is below lower 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611085

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095



Sterling Analytical, Inc.

15 Agawam Avenue
West Springfield, MA 01089
Phone (413) 214-6541 Fax (413) 214-6842
email-madhu@sterlinganalytical.com

Mass Certification - MA-00071
Conn Certification - PH-0520

Visit our website: www.sterlinganalytical.com

Report Date November 7, 2016

Customer	Contact	Laboratory Supervisor	eMail
ESS Laboratory	S. Morrell	Madhu Shah	customerservice@sterlinganalytical.com
Sample Description Analysis of Soil Sample			

Samples Analyzed

Enclosed are Report No(s): 57853

Blank = <0.05ppm

LCS Lo Check 0.100 = 0.116ppm

ICV 1.00 = 1.05ppm

Thank you for your business

madhu shah

11/7/2016

Madhu Shah, Laboratory Supervisor

Date

ALL the information contained in this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method.

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Sample Description	Source	Taken/Time	Received
57853 1611085-01	ESS Laboratory	11/2/16	11/3/16

Parameter	Results	MDL	Method	Analyzed/Time	Tech
Sulfur, Total	655 mg/kg	100.00	Special method	11/04/16	dfp

ESS Laboratory Sample and Cooler Receipt Checklist

Client: Charter Contracting Company LLC - KPB/TB/GZA/CMT

ESS Project ID: 1611085
 Date Received: 11/2/2016
 Project Due Date: 11/8/2016
 Days for Project: 4 Day

Shipped/Delivered Via: Client

- 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: 2.8 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
 Analysis: Sulfur
 TAT: 40 days

- 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: 11/2/16 Time: 1950 By: JL
 b. Low Level VOA vials frozen: Date: 11/2/16 Time: 1950 By: JL

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	80219	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	80220	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	80221	Yes	NA	Yes	8 oz. Jar - Unpres	NP	
01	80222	Yes	NA	Yes	2 oz. Jar - Unpres	NP	
01	80223	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
01	80224	Yes	NA	Yes	VOA Vial - Other	Other	
01	80225	Yes	NA	Yes	VOA Vial - Other	Other	

2nd Review
 Are barcode labels on correct containers? Yes / No

Completed By: [Signature] Date & Time: 11/2/16 1940
 Reviewed By: [Signature] Date & Time: 11/2/16 1950
 Delivered By: [Signature] Date & Time: 11/2/16 1950

1611085

ENVIRONMENTAL SOIL MANAGEMENT, INC. of NH
Pre Acceptance Analytical Plan (PAP)

MATERIAL ANALYTICAL REQUIREMENTS

Analytical requirements for material acceptance at ESMI are dependent on site history and contaminant. ESMI's analytical plan does not negate the generators responsibility to properly characterize the material prior to disposal. Deviation from prescribed sampling protocols, analytical parameters or methods may require re-sampling or re-analyzing. The following lists the minimum analytical requirements by contaminant. Additional analysis may be required after site history review.

CONTAMINANT	TPH	TOTAL VOCS ¹	TOTAL SVOCS ¹	TOTAL METALS ¹	PCBs	IGN	TOTAL SULFUR	TOTAL CYANIDE
SW-846 METHOD	GC/FID	8260	8270	RCRA 8	8080	1010	6010	9010
Virgin fuels and oils (Gasoline, diesel, #2, etc.)	X			Pb ²				
# 4 and # 6 fuel oils	X	X	X	Pb ²				
Used oils, lubricants and greases	X	X		X				
Electrical oils	X			Pb ²	X			
Coal tars, coal, pitch, tar, asphalt emulsion	X	X	X	X			X	X
Unused petroleum solvents	X	X	X	Pb ²		X		
Used Petroleum Solvents	X	X	X	X		X		
Waxes, esters, amides	X	X	X	Pb ²				
Unused animal/vegetable oil	X			Pb ²				
Used animal/vegetable oil	X			X				
Urban Fill	X	X	PAHs only	X				

¹If the total concentration of any constituent exceeds the TCLP hazardous waste level by the ratio 20:1, TCLP analysis for that constituent is required.

²Total lead analysis is required for soils originating from urban areas or where leaded gas may have been an issue.

REQUIRED SAMPLING PROTOCOL

Based on the anticipated quantity of material to be shipped to ESMI, the following number of composite samples is required:

Quantity (tons)
 <2000
 >2000

No. of Composite Samples
 one sample every 200 tons
 10 plus one additional for every 500 tons

Stockpiled soils shall be sampled by removing the first 12 inches of soil at a given sample location. Each required composite sample should be comprised of 8 grab samples. In-situ sampling shall be performed by dividing the total area to be excavated into equal sections and locating a boring or test pit as close to the center of the section as possible. Composite samples from borings shall be comprised of core samples collected at no greater than 2-foot intervals from the soil column.

67 International Drive, Loudon, NH 03307 ☐ (603)783-0228 ☐ Fax(603)783-0104

1611085

ENVIRONMENTAL SOIL MANAGEMENT, INC. of NH
Pre Acceptance Analytical Plan (PAP)

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Virgin fuels and oils (Gasoline, diesel, #2, etc.)	X			Pb ²				
# 4 and # 6 fuel oils	X	X	X	Pb ²				
Used oils, lubricants and greases	X	X		X				
Electrical oils	X			Pb ²	X			
Coal tars, coal, pitch, tar, asphalt emulsion	X	X	X	X			X	X
Unused petroleum solvents	X	X	X	Pb ²		X		
Used Petroleum Solvents	X	X	X	X		X		
Waxes, esters, amides	X	X	X	Pb ²				
Unused animal/vegetable oil	X			Pb ²				
Used animal/vegetable oil	X			X				
Urban Fill	X	X	PAHs only	X				

¹If the total concentration of any constituent exceeds the TCLP hazardous waste level by the ratio 20:1, TCLP analysis for that constituent is required.

²Total lead analysis is required for soils originating from urban areas or where leaded gas may have been an issue.

REQUIRED SAMPLING PROTOCOL

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CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

SAMPLE RECEIPT

The following samples were received on November 22, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1611645-01	Charter - 642	Soil	1311, 1311/6010C, 6010C, 6020A, 7471B, 8100M, 8260B, 8270D, 9014, D4239



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Methanol

- CK62330-BS1 **Blank Spike recovery is above upper control limit (B+).**
Bromomethane (136% @ 70-130%), Chloroethane (136% @ 70-130%), Chloromethane (149% @ 70-130%), Dichlorodifluoromethane (136% @ 70-130%), Vinyl Chloride (141% @ 70-130%)
- CK62330-BS1 **Blank Spike recovery is below lower control limit (B-).**
1,4-Dioxane - Screen (% @ 44-241%), Bromoform (54% @ 70-130%)
- CK62330-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Chloroethane (139% @ 70-130%), Chloromethane (148% @ 70-130%), Dichlorodifluoromethane (134% @ 70-130%), Diethyl Ether (145% @ 70-130%), Vinyl Chloride (134% @ 70-130%)
- CK62330-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Bromoform (56% @ 70-130%), Dibromochloromethane (68% @ 70-130%)
- CK62330-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
1,2-Dibromo-3-Chloropropane (31% @ 25%), Diethyl Ether (34% @ 25%)
- CZK0371-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Diethyl Ether (45% @ 30%)
- CZK0371-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Bromoform (31% @ 30%)

8270D Semi-Volatile Organic Compounds

- CK62216-BS1 **Blank Spike recovery is below lower control limit (B-).**
Benzoic Acid (36% @ 40-140%), N-Nitrosodimethylamine (32% @ 40-140%), Pyridine (33% @ 40-140%)
- CK62216-BSD1 **Blank Spike recovery is below lower control limit (B-).**
- CZK0345-CCV1 **Calibration required quadratic regression (Q).**
2,4-Dinitrophenol (105% @ 80-120%), 4-Nitrophenol (145% @ 80-120%), Benzoic Acid (89% @ 80-120%), Pentachlorophenol (136% @ 80-120%)
- CZK0345-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
2,4,5-Trichlorophenol (29% @ 20%), 2,4,6-Tribromophenol (34% @ 20%), 2-Nitroaniline (23% @ 20%), 3,3'-Dichlorobenzidine (25% @ 20%), 4-Nitrophenol (45% @ 20%), bis(2-Ethylhexyl)phthalate (22% @ 20%), Di-n-octylphthalate (30% @ 20%), Pentachlorophenol (36% @ 20%)
- CZK0345-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Hexachlorocyclopentadiene (40% @ 20%)
- CZK0365-CCV1 **Calibration required quadratic regression (Q).**
2,4,6-Tribromophenol (93% @ 80-120%), 2,4-Dinitrophenol (91% @ 80-120%), Benzoic Acid (61% @ 80-120%), Pentachlorophenol (76% @ 80-120%)
- CZK0365-CCV1 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
bis(2-Ethylhexyl)phthalate (32% @ 20%), Butylbenzylphthalate (25% @ 20%), Di-n-butylphthalate (21% @ 20%), Phenol (24% @ 20%)
- CZK0365-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**
Benzoic Acid (39% @ 20%), Hexachlorocyclopentadiene (48% @ 20%), N-Nitrosodimethylamine (29% @ 20%), Pentachlorophenol (24% @ 20%)



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: Allens Ave

ESS Laboratory Work Order: 1611645

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: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Arsenic	4.04 (2.06)		6010C		1	NAR	11/23/16 15:22	2.54	100	CK62309
Barium	28.8 (2.06)		6010C		1	NAR	11/23/16 15:22	2.54	100	CK62309
Cadmium	ND (0.41)		6010C		1	NAR	11/23/16 15:22	2.54	100	CK62309
Chromium	7.89 (0.83)		6010C		1	NAR	11/23/16 15:22	2.54	100	CK62309
Lead	372 (4.13)		6010C		1	NAR	11/23/16 15:22	2.54	100	CK62309
Mercury	0.081 (0.028)		7471B		1	AA	11/23/16 15:53	0.74	40	CK62310
Selenium	ND (0.41)		6020A		20	NAR	11/23/16 15:03	2.54	100	CK62309
Silver	ND (0.41)		6010C		1	NAR	11/23/16 15:22	2.54	100	CK62309



CERTIFICATE OF ANALYSIS

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Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/L

Extraction Method: 3005A TCLP

1311 TCLP Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>TCLP Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Lead	2.23 (0.050)		1311/6010C		1	NAR	11/25/16 14:35	50	50	CK62312



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 23.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: GEM

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,1,1-Trichloroethane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,1,2,2-Tetrachloroethane	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,1,2-Trichloroethane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,1-Dichloroethane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,1-Dichloroethene	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,1-Dichloropropene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2,3-Trichlorobenzene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2,3-Trichloropropane	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2,4-Trichlorobenzene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2,4-Trimethylbenzene	J 0.0377 (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2-Dibromo-3-Chloropropane	ND (0.725)	0.145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2-Dibromoethane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2-Dichlorobenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2-Dichloroethane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,2-Dichloropropane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,3,5-Trimethylbenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,3-Dichlorobenzene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,3-Dichloropropane	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,4-Dichlorobenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
1,4-Dioxane - Screen	ND (29.0)	27.6	8260B		1	11/23/16 14:05	CZK0371	CK62330
1-Chlorohexane	ND (0.145)	0.0580	8260B		1	11/23/16 14:05	CZK0371	CK62330
2,2-Dichloropropane	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
2-Butanone	ND (0.725)	0.493	8260B		1	11/23/16 14:05	CZK0371	CK62330
2-Chlorotoluene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
2-Hexanone	ND (0.725)	0.218	8260B		1	11/23/16 14:05	CZK0371	CK62330
4-Chlorotoluene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
4-Isopropyltoluene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
4-Methyl-2-Pentanone	ND (0.725)	0.232	8260B		1	11/23/16 14:05	CZK0371	CK62330
Acetone	ND (0.725)	0.392	8260B		1	11/23/16 14:05	CZK0371	CK62330
Benzene	J 0.0580 (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Bromobenzene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 23.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: GEM

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
Bromodichloromethane	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Bromoform	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Bromomethane	ND (0.145)	0.0580	8260B		1	11/23/16 14:05	CZK0371	CK62330
Carbon Disulfide	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Carbon Tetrachloride	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Chlorobenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Chloroethane	ND (0.145)	0.0580	8260B		1	11/23/16 14:05	CZK0371	CK62330
Chloroform	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Chloromethane	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
cis-1,2-Dichloroethene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
cis-1,3-Dichloropropene	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
Dibromochloromethane	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Dibromomethane	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
Dichlorodifluoromethane	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
Diethyl Ether	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
Di-isopropyl ether	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Ethyl tertiary-butyl ether	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Ethylbenzene	J 0.0218 (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Hexachlorobutadiene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Isopropylbenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Methyl tert-Butyl Ether	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
Methylene Chloride	ND (0.290)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Naphthalene	0.189 (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
n-Butylbenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
n-Propylbenzene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
sec-Butylbenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Styrene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
tert-Butylbenzene	ND (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Tertiary-amyl methyl ether	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Tetrachloroethene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Tetrahydrofuran	ND (0.725)	0.232	8260B		1	11/23/16 14:05	CZK0371	CK62330



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 23.2
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: GEM

5035/8260B Volatile Organic Compounds / Methanol

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Toluene	J 0.0696 (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
trans-1,2-Dichloroethene	ND (0.145)	0.0435	8260B		1	11/23/16 14:05	CZK0371	CK62330
trans-1,3-Dichloropropene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Trichloroethene	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Trichlorofluoromethane	ND (0.145)	0.0580	8260B		1	11/23/16 14:05	CZK0371	CK62330
Vinyl Acetate	ND (0.145)	0.0725	8260B		1	11/23/16 14:05	CZK0371	CK62330
Vinyl Chloride	ND (0.145)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Xylene O	J 0.0392 (0.145)	0.0145	8260B		1	11/23/16 14:05	CZK0371	CK62330
Xylene P,M	J 0.0609 (0.290)	0.0290	8260B		1	11/23/16 14:05	CZK0371	CK62330
Xylenes (Total)	ND (0.290)		8260B		1	11/23/16 14:05		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	112 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	90 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	103 %		70-130
<i>Surrogate: Toluene-d8</i>	116 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 19.4
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 11/22/16 16:30

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	273 (40.5)		8100M		1	11/23/16 10:22	CZK0342	CK62215
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		92 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/22/16 16:30

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1-Biphenyl	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
1,2,4-Trichlorobenzene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
1,2-Dichlorobenzene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
1,3-Dichlorobenzene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
1,4-Dichlorobenzene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,3,4,6-Tetrachlorophenol	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,4,5-Trichlorophenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,4,6-Trichlorophenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,4-Dichlorophenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,4-Dimethylphenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,4-Dinitrophenol	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,4-Dinitrotoluene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2,6-Dinitrotoluene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2-Chloronaphthalene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2-Chlorophenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2-Methylnaphthalene	0.369 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2-Methylphenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2-Nitroaniline	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
2-Nitrophenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
3,3'-Dichlorobenzidine	ND (0.733)		8270D		1	11/22/16 20:39	CZK0345	CK62216
3+4-Methylphenol	ND (0.733)		8270D		1	11/22/16 20:39	CZK0345	CK62216
3-Nitroaniline	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4,6-Dinitro-2-Methylphenol	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4-Bromophenyl-phenylether	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4-Chloro-3-Methylphenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4-Chloroaniline	ND (0.733)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4-Chloro-phenyl-phenyl ether	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4-Nitroaniline	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
4-Nitrophenol	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Acenaphthene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Acenaphthylene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Acetophenone	ND (0.733)		8270D		1	11/22/16 20:39	CZK0345	CK62216



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/22/16 16:30

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aniline	ND (0.733)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Anthracene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Azobenzene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzo(a)anthracene	0.901 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzo(a)pyrene	0.837 (0.184)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzo(b)fluoranthene	1.43 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzo(g,h,i)perylene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzo(k)fluoranthene	0.513 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzoic Acid	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Benzyl Alcohol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
bis(2-Chloroethoxy)methane	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
bis(2-Chloroethyl)ether	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
bis(2-chloroisopropyl)Ether	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
bis(2-Ethylhexyl)phthalate	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Butylbenzylphthalate	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Carbazole	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Chrysene	0.969 (0.184)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Dibenzo(a,h)Anthracene	ND (0.184)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Dibenzofuran	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Diethylphthalate	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Dimethylphthalate	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Di-n-butylphthalate	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Di-n-octylphthalate	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Fluoranthene	1.79 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Fluorene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Hexachlorobenzene	ND (0.184)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Hexachlorobutadiene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Hexachlorocyclopentadiene	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Hexachloroethane	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Indeno(1,2,3-cd)Pyrene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Isophorone	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Naphthalene	1.17 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 11/22/16 16:30

8270D Semi-Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Nitrobenzene	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
N-Nitrosodimethylamine	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
N-Nitroso-Di-n-Propylamine	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
N-nitrosodiphenylamine	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Pentachlorophenol	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Phenanthrene	0.869 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Phenol	ND (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Pyrene	1.62 (0.366)		8270D		1	11/22/16 20:39	CZK0345	CK62216
Pyridine	ND (1.84)		8270D		1	11/22/16 20:39	CZK0345	CK62216

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>57 %</i>		<i>30-130</i>
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>113 %</i>		<i>30-130</i>
<i>Surrogate: 2-Chlorophenol-d4</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66 %</i>		<i>30-130</i>
<i>Surrogate: 2-Fluorophenol</i>	<i>65 %</i>		<i>30-130</i>
<i>Surrogate: Nitrobenzene-d5</i>	<i>61 %</i>		<i>30-130</i>
<i>Surrogate: Phenol-d6</i>	<i>74 %</i>		<i>30-130</i>
<i>Surrogate: p-Terphenyl-d14</i>	<i>103 %</i>		<i>30-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil

Classical Chemistry

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Units</u>	<u>Batch</u>
Total Cyanide	18.3 (1.03)		9014		1	EEM	11/23/16 11:15	mg/kg dry	CK62321
Sulfur	See Attached (N/A)								



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave
Client Sample ID: Charter - 642
Date Sampled: 11/22/16 14:00
Percent Solids: 95
Initial Volume: 100
Final Volume: 2000
Extraction Method: 1311

ESS Laboratory Work Order: 1611645
ESS Laboratory Sample ID: 1611645-01
Sample Matrix: Soil
Units: °C
Analyst: AXO
Prepared: 11/22/16 17:00

TCLP Extraction by 1311

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>Batch</u>
Temperature (Min C)	19.6 (N/A)		1311		1	AXO	11/23/16 9:30	CK62237
Temperature (Max C)	21.9 (N/A)		1311		1	AXO	11/23/16 9:30	CK62237
Temperature (Range)	Temperature is not within 23 +/-2 °C. (N/A)							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Total Metals

Batch CK62309 - 3050B

Blank

Arsenic	ND	2.50	mg/kg wet
Barium	ND	2.50	mg/kg wet
Cadmium	ND	0.50	mg/kg wet
Chromium	ND	1.00	mg/kg wet
Lead	ND	5.00	mg/kg wet
Selenium	ND	0.50	mg/kg wet
Silver	ND	0.50	mg/kg wet

LCS

Arsenic	147	8.77	mg/kg wet	161.0	91	80-120
Barium	346	8.77	mg/kg wet	351.0	99	80-120
Cadmium	170	1.75	mg/kg wet	190.0	90	80-120
Chromium	85.3	3.51	mg/kg wet	87.90	97	80-120
Lead	136	17.5	mg/kg wet	138.0	99	80-120
Selenium	333	21.9	mg/kg wet	305.0	109	80-120
Silver	57.2	1.75	mg/kg wet	58.00	99	80-120

LCS Dup

Arsenic	135	8.06	mg/kg wet	161.0	84	80-120	8	20
Barium	314	8.06	mg/kg wet	351.0	90	80-120	10	20
Cadmium	160	1.61	mg/kg wet	190.0	84	80-120	6	20
Chromium	80.4	3.23	mg/kg wet	87.90	92	80-120	6	20
Lead	128	16.1	mg/kg wet	138.0	93	80-120	6	20
Selenium	325	20.2	mg/kg wet	305.0	107	80-120	3	30
Silver	53.9	1.61	mg/kg wet	58.00	93	80-120	6	20

Batch CK62310 - 7471B

Blank

Mercury	ND	0.033	mg/kg wet
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LCS

Mercury	16.2	1.83	mg/kg wet	15.90	102	80-120
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LCS Dup

Mercury	16.3	1.87	mg/kg wet	15.90	103	80-120	0.8	20
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1311 TCLP Metals

Batch CK62312 - 3005A_TCLP

Blank

Lead	ND	0.050	mg/L
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LCS

Lead	0.454	0.050	mg/L	0.5000	91	80-120
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LCS Dup

Lead	0.425	0.050	mg/L	0.5000	85	80-120	6	20
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5035/8260B Volatile Organic Compounds / Methanol



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CK62330 - 5035

Blank

1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CK62330 - 5035

Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Xylenes (Total)	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	5.04		mg/kg wet	5.000		101	70-130			
Surrogate: 4-Bromofluorobenzene	3.92		mg/kg wet	5.000		78	70-130			
Surrogate: Dibromofluoromethane	4.59		mg/kg wet	5.000		92	70-130			
Surrogate: Toluene-d8	4.98		mg/kg wet	5.000		100	70-130			

LCS

1,1,1,2-Tetrachloroethane	1.45	0.200	mg/kg wet	2.000		72	70-130			
1,1,1-Trichloroethane	1.67	0.200	mg/kg wet	2.000		84	70-130			
1,1,2,2-Tetrachloroethane	1.93	0.200	mg/kg wet	2.000		96	70-130			
1,1,2-Trichloroethane	1.87	0.200	mg/kg wet	2.000		93	70-130			
1,1-Dichloroethane	2.07	0.200	mg/kg wet	2.000		103	70-130			
1,1-Dichloroethene	2.33	0.200	mg/kg wet	2.000		117	70-130			
1,1-Dichloropropene	2.17	0.200	mg/kg wet	2.000		108	70-130			
1,2,3-Trichlorobenzene	1.82	0.200	mg/kg wet	2.000		91	70-130			
1,2,3-Trichloropropane	1.75	0.200	mg/kg wet	2.000		87	70-130			
1,2,4-Trichlorobenzene	1.83	0.200	mg/kg wet	2.000		91	70-130			
1,2,4-Trimethylbenzene	1.87	0.200	mg/kg wet	2.000		93	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CK62330 - 5035

1,2-Dibromo-3-Chloropropane	1.98	1.00	mg/kg wet	2.000		99	70-130			
1,2-Dibromoethane	1.77	0.200	mg/kg wet	2.000		88	70-130			
1,2-Dichlorobenzene	1.91	0.200	mg/kg wet	2.000		95	70-130			
1,2-Dichloroethane	2.12	0.200	mg/kg wet	2.000		106	70-130			
1,2-Dichloropropane	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,3,5-Trimethylbenzene	1.87	0.200	mg/kg wet	2.000		94	70-130			
1,3-Dichlorobenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,3-Dichloropropane	2.13	0.200	mg/kg wet	2.000		106	70-130			
1,4-Dichlorobenzene	1.93	0.200	mg/kg wet	2.000		97	70-130			
1,4-Dioxane - Screen	ND	40.0	mg/kg wet	40.00			44-241			B-
1-Chlorohexane	1.80	0.200	mg/kg wet	2.000		90	70-130			
2,2-Dichloropropane	2.00	0.200	mg/kg wet	2.000		100	70-130			
2-Butanone	11.1	1.00	mg/kg wet	10.00		111	70-130			
2-Chlorotoluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
2-Hexanone	9.53	1.00	mg/kg wet	10.00		95	70-130			
4-Chlorotoluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
4-Isopropyltoluene	1.99	0.200	mg/kg wet	2.000		100	70-130			
4-Methyl-2-Pentanone	9.52	1.00	mg/kg wet	10.00		95	70-130			
Acetone	12.1	1.00	mg/kg wet	10.00		121	70-130			
Benzene	2.12	0.200	mg/kg wet	2.000		106	70-130			
Bromobenzene	1.99	0.200	mg/kg wet	2.000		100	70-130			
Bromochloromethane	2.11	0.200	mg/kg wet	2.000		105	70-130			
Bromodichloromethane	1.88	0.200	mg/kg wet	2.000		94	70-130			
Bromoform	1.07	0.200	mg/kg wet	2.000		54	70-130			B-
Bromomethane	2.73	0.200	mg/kg wet	2.000		136	70-130			B+
Carbon Disulfide	2.09	0.200	mg/kg wet	2.000		104	70-130			
Carbon Tetrachloride	1.60	0.200	mg/kg wet	2.000		80	70-130			
Chlorobenzene	1.99	0.200	mg/kg wet	2.000		100	70-130			
Chloroethane	2.73	0.200	mg/kg wet	2.000		136	70-130			B+
Chloroform	2.17	0.200	mg/kg wet	2.000		108	70-130			
Chloromethane	2.98	0.200	mg/kg wet	2.000		149	70-130			B+
cis-1,2-Dichloroethene	2.07	0.200	mg/kg wet	2.000		103	70-130			
cis-1,3-Dichloropropene	1.86	0.200	mg/kg wet	2.000		93	70-130			
Dibromochloromethane	1.42	0.200	mg/kg wet	2.000		71	70-130			
Dibromomethane	1.89	0.200	mg/kg wet	2.000		94	70-130			
Dichlorodifluoromethane	2.72	0.200	mg/kg wet	2.000		136	70-130			B+
Diethyl Ether	2.07	0.200	mg/kg wet	2.000		104	70-130			
Di-isopropyl ether	2.18	0.200	mg/kg wet	2.000		109	70-130			
Ethyl tertiary-butyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130			
Ethylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130			
Hexachlorobutadiene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Isopropylbenzene	1.63	0.200	mg/kg wet	2.000		82	70-130			
Methyl tert-Butyl Ether	1.98	0.200	mg/kg wet	2.000		99	70-130			
Methylene Chloride	2.34	0.400	mg/kg wet	2.000		117	70-130			
Naphthalene	1.80	0.200	mg/kg wet	2.000		90	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CK62330 - 5035

n-Butylbenzene	2.03	0.200	mg/kg wet	2.000		101	70-130			
n-Propylbenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
sec-Butylbenzene	1.93	0.200	mg/kg wet	2.000		97	70-130			
Styrene	1.76	0.200	mg/kg wet	2.000		88	70-130			
tert-Butylbenzene	1.80	0.200	mg/kg wet	2.000		90	70-130			
Tertiary-amyl methyl ether	1.76	0.200	mg/kg wet	2.000		88	70-130			
Tetrachloroethene	2.03	0.200	mg/kg wet	2.000		102	70-130			
Tetrahydrofuran	2.14	1.00	mg/kg wet	2.000		107	70-130			
Toluene	2.00	0.200	mg/kg wet	2.000		100	70-130			
trans-1,2-Dichloroethene	2.07	0.200	mg/kg wet	2.000		103	70-130			
trans-1,3-Dichloropropene	1.48	0.200	mg/kg wet	2.000		74	70-130			
Trichloroethene	1.91	0.200	mg/kg wet	2.000		95	70-130			
Vinyl Acetate	2.02	0.200	mg/kg wet	2.000		101	70-130			
Vinyl Chloride	2.82	0.200	mg/kg wet	2.000		141	70-130			B+
Xylene O	1.89	0.200	mg/kg wet	2.000		95	70-130			
Xylene P,M	3.80	0.400	mg/kg wet	4.000		95	70-130			
Xylenes (Total)	5.69	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	5.85		mg/kg wet	5.000		117	70-130			
Surrogate: 4-Bromofluorobenzene	4.81		mg/kg wet	5.000		96	70-130			
Surrogate: Dibromofluoromethane	5.51		mg/kg wet	5.000		110	70-130			
Surrogate: Toluene-d8	5.58		mg/kg wet	5.000		112	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	1.46	0.200	mg/kg wet	2.000		73	70-130	0.8	25	
1,1,1-Trichloroethane	1.73	0.200	mg/kg wet	2.000		86	70-130	3	25	
1,1,2,2-Tetrachloroethane	1.92	0.200	mg/kg wet	2.000		96	70-130	0.5	25	
1,1,2-Trichloroethane	1.76	0.200	mg/kg wet	2.000		88	70-130	6	25	
1,1-Dichloroethane	2.15	0.200	mg/kg wet	2.000		107	70-130	4	25	
1,1-Dichloroethene	2.55	0.200	mg/kg wet	2.000		128	70-130	9	25	
1,1-Dichloropropene	2.13	0.200	mg/kg wet	2.000		107	70-130	2	25	
1,2,3-Trichlorobenzene	1.80	0.200	mg/kg wet	2.000		90	70-130	1	25	
1,2,3-Trichloropropane	1.74	0.200	mg/kg wet	2.000		87	70-130	0.6	25	
1,2,4-Trichlorobenzene	1.79	0.200	mg/kg wet	2.000		89	70-130	2	25	
1,2,4-Trimethylbenzene	1.54	0.200	mg/kg wet	2.000		77	70-130	19	25	
1,2-Dibromo-3-Chloropropane	1.45	1.00	mg/kg wet	2.000		73	70-130	31	25	D+
1,2-Dibromoethane	1.71	0.200	mg/kg wet	2.000		86	70-130	3	25	
1,2-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	0.5	25	
1,2-Dichloroethane	2.12	0.200	mg/kg wet	2.000		106	70-130	0.2	25	
1,2-Dichloropropane	2.01	0.200	mg/kg wet	2.000		100	70-130	7	25	
1,3,5-Trimethylbenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	0.7	25	
1,3-Dichlorobenzene	1.90	0.200	mg/kg wet	2.000		95	70-130	0.3	25	
1,3-Dichloropropane	2.13	0.200	mg/kg wet	2.000		106	70-130	0.09	25	
1,4-Dichlorobenzene	1.91	0.200	mg/kg wet	2.000		96	70-130	0.9	25	
1,4-Dioxane - Screen	50.5	40.0	mg/kg wet	40.00		126	44-241	198	200	
1-Chlorohexane	1.80	0.200	mg/kg wet	2.000		90	70-130	0.1	25	
2,2-Dichloropropane	1.91	0.200	mg/kg wet	2.000		96	70-130	4	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CK62330 - 5035

2-Butanone	11.2	1.00	mg/kg wet	10.00		112	70-130	0.9	25	
2-Chlorotoluene	2.06	0.200	mg/kg wet	2.000		103	70-130	3	25	
2-Hexanone	9.71	1.00	mg/kg wet	10.00		97	70-130	2	25	
4-Chlorotoluene	1.99	0.200	mg/kg wet	2.000		100	70-130	0.2	25	
4-Isopropyltoluene	2.07	0.200	mg/kg wet	2.000		104	70-130	4	25	
4-Methyl-2-Pentanone	9.58	1.00	mg/kg wet	10.00		96	70-130	0.7	25	
Acetone	12.2	1.00	mg/kg wet	10.00		122	70-130	0.9	25	
Benzene	2.15	0.200	mg/kg wet	2.000		108	70-130	1	25	
Bromobenzene	2.01	0.200	mg/kg wet	2.000		101	70-130	0.9	25	
Bromochloromethane	2.04	0.200	mg/kg wet	2.000		102	70-130	3	25	
Bromodichloromethane	1.82	0.200	mg/kg wet	2.000		91	70-130	3	25	
Bromoform	1.13	0.200	mg/kg wet	2.000		56	70-130	5	25	B-
Bromomethane	2.45	0.200	mg/kg wet	2.000		122	70-130	11	25	
Carbon Disulfide	2.06	0.200	mg/kg wet	2.000		103	70-130	1	25	
Carbon Tetrachloride	1.55	0.200	mg/kg wet	2.000		78	70-130	3	25	
Chlorobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	0.7	25	
Chloroethane	2.78	0.200	mg/kg wet	2.000		139	70-130	2	25	B+
Chloroform	2.08	0.200	mg/kg wet	2.000		104	70-130	4	25	
Chloromethane	2.97	0.200	mg/kg wet	2.000		148	70-130	0.3	25	B+
cis-1,2-Dichloroethene	2.05	0.200	mg/kg wet	2.000		102	70-130	0.9	25	
cis-1,3-Dichloropropene	1.89	0.200	mg/kg wet	2.000		94	70-130	2	25	
Dibromochloromethane	1.37	0.200	mg/kg wet	2.000		68	70-130	4	25	B-
Dibromomethane	1.94	0.200	mg/kg wet	2.000		97	70-130	3	25	
Dichlorodifluoromethane	2.67	0.200	mg/kg wet	2.000		134	70-130	2	25	B+
Diethyl Ether	2.91	0.200	mg/kg wet	2.000		145	70-130	34	25	B+, D+
Di-isopropyl ether	2.13	0.200	mg/kg wet	2.000		107	70-130	2	25	
Ethyl tertiary-butyl ether	1.93	0.200	mg/kg wet	2.000		97	70-130	0.3	25	
Ethylbenzene	1.93	0.200	mg/kg wet	2.000		97	70-130	0.6	25	
Hexachlorobutadiene	1.97	0.200	mg/kg wet	2.000		99	70-130	3	25	
Isopropylbenzene	1.64	0.200	mg/kg wet	2.000		82	70-130	0.4	25	
Methyl tert-Butyl Ether	1.96	0.200	mg/kg wet	2.000		98	70-130	1	25	
Methylene Chloride	2.42	0.400	mg/kg wet	2.000		121	70-130	3	25	
Naphthalene	1.79	0.200	mg/kg wet	2.000		89	70-130	0.7	25	
n-Butylbenzene	2.07	0.200	mg/kg wet	2.000		104	70-130	2	25	
n-Propylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130	3	25	
sec-Butylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130	2	25	
Styrene	1.77	0.200	mg/kg wet	2.000		88	70-130	0.7	25	
tert-Butylbenzene	1.85	0.200	mg/kg wet	2.000		92	70-130	3	25	
Tertiary-amyl methyl ether	1.74	0.200	mg/kg wet	2.000		87	70-130	1	25	
Tetrachloroethene	1.93	0.200	mg/kg wet	2.000		96	70-130	5	25	
Tetrahydrofuran	2.00	1.00	mg/kg wet	2.000		100	70-130	6	25	
Toluene	2.09	0.200	mg/kg wet	2.000		104	70-130	4	25	
trans-1,2-Dichloroethene	2.07	0.200	mg/kg wet	2.000		104	70-130	0.4	25	
trans-1,3-Dichloropropene	1.45	0.200	mg/kg wet	2.000		72	70-130	2	25	
Trichloroethene	1.90	0.200	mg/kg wet	2.000		95	70-130	0.5	25	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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5035/8260B Volatile Organic Compounds / Methanol

Batch CK62330 - 5035

Vinyl Acetate	1.92	0.200	mg/kg wet	2.000		96	70-130	5	25	
Vinyl Chloride	2.69	0.200	mg/kg wet	2.000		134	70-130	5	25	B+
Xylene O	1.86	0.200	mg/kg wet	2.000		93	70-130	2	25	
Xylene P,M	3.69	0.400	mg/kg wet	4.000		92	70-130	3	25	
Xylenes (Total)	5.55	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	6.04		mg/kg wet	5.000		121	70-130			
Surrogate: 4-Bromofluorobenzene	4.81		mg/kg wet	5.000		96	70-130			
Surrogate: Dibromofluoromethane	5.63		mg/kg wet	5.000		113	70-130			
Surrogate: Toluene-d8	5.67		mg/kg wet	5.000		113	70-130			

8100M Total Petroleum Hydrocarbons

Batch CK62215 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet							
Docosane (C22)	ND	0.2	mg/kg wet							
Dodecane (C12)	ND	0.2	mg/kg wet							
Eicosane (C20)	ND	0.2	mg/kg wet							
Hexacosane (C26)	ND	0.2	mg/kg wet							
Hexadecane (C16)	ND	0.2	mg/kg wet							
Nonadecane (C19)	ND	0.2	mg/kg wet							
Nonane (C9)	ND	0.2	mg/kg wet							
Octacosane (C28)	ND	0.2	mg/kg wet							
Octadecane (C18)	ND	0.2	mg/kg wet							
Tetracosane (C24)	ND	0.2	mg/kg wet							
Tetradecane (C14)	ND	0.2	mg/kg wet							
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet							
Triacontane (C30)	ND	0.2	mg/kg wet							

Surrogate: O-Terphenyl	4.69		mg/kg wet	5.000		94	40-140			
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LCS

Decane (C10)	1.8	0.2	mg/kg wet	2.500		73	40-140			
Docosane (C22)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		78	40-140			
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500		89	40-140			
Hexadecane (C16)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Nonadecane (C19)	2.1	0.2	mg/kg wet	2.500		85	40-140			
Nonane (C9)	1.6	0.2	mg/kg wet	2.500		66	30-140			
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Octadecane (C18)	2.2	0.2	mg/kg wet	2.500		86	40-140			
Tetracosane (C24)	2.2	0.2	mg/kg wet	2.500		88	40-140			
Tetradecane (C14)	2.0	0.2	mg/kg wet	2.500		82	40-140			
Total Petroleum Hydrocarbons	22.1	37.5	mg/kg wet	35.00		63	40-140			
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500		88	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CK62215 - 3546

<i>Surrogate: O-Terphenyl</i>	4.81		mg/kg wet	5.000		96	40-140			
LCS Dup										
Decane (C10)	1.9	0.2	mg/kg wet	2.500		76	40-140	4	25	
Docosane (C22)	2.3	0.2	mg/kg wet	2.500		93	40-140	5	25	
Dodecane (C12)	2.0	0.2	mg/kg wet	2.500		82	40-140	4	25	
Eicosane (C20)	2.3	0.2	mg/kg wet	2.500		94	40-140	5	25	
Hexacosane (C26)	2.3	0.2	mg/kg wet	2.500		92	40-140	4	25	
Hexadecane (C16)	2.3	0.2	mg/kg wet	2.500		93	40-140	6	25	
Nonadecane (C19)	2.2	0.2	mg/kg wet	2.500		89	40-140	5	25	
Nonane (C9)	1.7	0.2	mg/kg wet	2.500		68	30-140	3	25	
Octacosane (C28)	2.3	0.2	mg/kg wet	2.500		92	40-140	4	25	
Octadecane (C18)	2.3	0.2	mg/kg wet	2.500		90	40-140	5	25	
Tetracosane (C24)	2.3	0.2	mg/kg wet	2.500		93	40-140	5	25	
Tetradecane (C14)	2.1	0.2	mg/kg wet	2.500		85	40-140	4	25	
Total Petroleum Hydrocarbons	23.5	37.5	mg/kg wet	35.00		67	40-140	6	25	
Triacontane (C30)	2.3	0.2	mg/kg wet	2.500		92	40-140	4	25	

<i>Surrogate: O-Terphenyl</i>	4.96		mg/kg wet	5.000		99	40-140			
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8270D Semi-Volatile Organic Compounds

Batch CK62216 - 3546

Blank										
1,1-Biphenyl	ND	0.333	mg/kg wet							
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							
2,3,4,6-Tetrachlorophenol	ND	1.67	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-Nitroaniline	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							
3-Nitroaniline	ND	0.333	mg/kg wet							



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
 Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK62216 - 3546

4,6-Dinitro-2-Methylphenol	ND	1.67	mg/kg wet
4-Bromophenyl-phenylether	ND	0.333	mg/kg wet
4-Chloro-3-Methylphenol	ND	0.333	mg/kg wet
4-Chloroaniline	ND	0.667	mg/kg wet
4-Chloro-phenyl-phenyl ether	ND	0.333	mg/kg wet
4-Nitroaniline	ND	0.333	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	0.667	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
Benzoic Acid	ND	1.67	mg/kg wet
Benzyl Alcohol	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
Carbazole	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	0.167	mg/kg wet
Hexachlorobutadiene	ND	0.333	mg/kg wet
Hexachlorocyclopentadiene	ND	1.67	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
N-Nitroso-Di-n-Propylamine	ND	0.333	mg/kg wet



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK62216 - 3546

N-nitrosodiphenylamine	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	2.89		mg/kg wet	3.333		87	30-130			
Surrogate: 2,4,6-Tribromophenol	3.06		mg/kg wet	5.000		61	30-130			
Surrogate: 2-Chlorophenol-d4	4.51		mg/kg wet	5.000		90	30-130			
Surrogate: 2-Fluorobiphenyl	2.63		mg/kg wet	3.333		79	30-130			
Surrogate: 2-Fluorophenol	4.37		mg/kg wet	5.000		87	30-130			
Surrogate: Nitrobenzene-d5	2.78		mg/kg wet	3.333		83	30-130			
Surrogate: Phenol-d6	4.40		mg/kg wet	5.000		88	30-130			
Surrogate: p-Terphenyl-d14	3.40		mg/kg wet	3.333		102	30-130			

LCS

1,1-Biphenyl	1.94	0.333	mg/kg wet	3.333		58	40-140			
1,2,4-Trichlorobenzene	1.76	0.333	mg/kg wet	3.333		53	40-140			
1,2-Dichlorobenzene	1.68	0.333	mg/kg wet	3.333		51	40-140			
1,3-Dichlorobenzene	1.70	0.333	mg/kg wet	3.333		51	40-140			
1,4-Dichlorobenzene	1.70	0.333	mg/kg wet	3.333		51	40-140			
2,3,4,6-Tetrachlorophenol	2.04	1.67	mg/kg wet	3.333		61	30-130			
2,4,5-Trichlorophenol	2.41	0.333	mg/kg wet	3.333		72	30-130			
2,4,6-Trichlorophenol	2.12	0.333	mg/kg wet	3.333		64	30-130			
2,4-Dichlorophenol	1.98	0.333	mg/kg wet	3.333		59	30-130			
2,4-Dimethylphenol	1.96	0.333	mg/kg wet	3.333		59	30-130			
2,4-Dinitrophenol	1.94	1.67	mg/kg wet	3.333		58	30-130			
2,4-Dinitrotoluene	2.75	0.333	mg/kg wet	3.333		82	40-140			
2,6-Dinitrotoluene	2.44	0.333	mg/kg wet	3.333		73	40-140			
2-Chloronaphthalene	1.80	0.333	mg/kg wet	3.333		54	40-140			
2-Chlorophenol	1.81	0.333	mg/kg wet	3.333		54	30-130			
2-Methylnaphthalene	1.80	0.333	mg/kg wet	3.333		54	40-140			
2-Methylphenol	1.90	0.333	mg/kg wet	3.333		57	30-130			
2-Nitroaniline	2.10	0.333	mg/kg wet	3.333		63	40-140			
2-Nitrophenol	1.80	0.333	mg/kg wet	3.333		54	30-130			
3,3'-Dichlorobenzidine	1.94	0.667	mg/kg wet	3.333		58	40-140			
3+4-Methylphenol	3.69	0.667	mg/kg wet	6.667		55	30-130			
3-Nitroaniline	2.52	0.333	mg/kg wet	3.333		76	40-140			
4,6-Dinitro-2-Methylphenol	2.22	1.67	mg/kg wet	3.333		67	30-130			
4-Bromophenyl-phenylether	2.24	0.333	mg/kg wet	3.333		67	40-140			
4-Chloro-3-Methylphenol	2.25	0.333	mg/kg wet	3.333		68	30-130			
4-Chloroaniline	1.87	0.667	mg/kg wet	3.333		56	40-140			
4-Chloro-phenyl-phenyl ether	2.17	0.333	mg/kg wet	3.333		65	40-140			
4-Nitroaniline	2.24	0.333	mg/kg wet	3.333		67	40-140			
4-Nitrophenol	2.04	1.67	mg/kg wet	3.333		61	30-130			
Acenaphthene	2.05	0.333	mg/kg wet	3.333		61	40-140			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8270D Semi-Volatile Organic Compounds										
Batch CK62216 - 3546										
Acenaphthylene	2.04	0.333	mg/kg wet	3.333		61	40-140			
Acetophenone	1.79	0.667	mg/kg wet	3.333		54	40-140			
Aniline	1.66	0.667	mg/kg wet	3.333		50	40-140			
Anthracene	2.66	0.333	mg/kg wet	3.333		80	40-140			
Azobenzene	2.21	0.333	mg/kg wet	3.333		66	40-140			
Benzo(a)anthracene	2.70	0.333	mg/kg wet	3.333		81	40-140			
Benzo(a)pyrene	2.84	0.167	mg/kg wet	3.333		85	40-140			
Benzo(b)fluoranthene	3.04	0.333	mg/kg wet	3.333		91	40-140			
Benzo(g,h,i)perylene	2.56	0.333	mg/kg wet	3.333		77	40-140			
Benzo(k)fluoranthene	2.61	0.333	mg/kg wet	3.333		78	40-140			
Benzoic Acid	1.21	1.67	mg/kg wet	3.333		36	40-140			B-
Benzyl Alcohol	1.56	0.333	mg/kg wet	3.333		47	40-140			
bis(2-Chloroethoxy)methane	1.83	0.333	mg/kg wet	3.333		55	40-140			
bis(2-Chloroethyl)ether	1.70	0.333	mg/kg wet	3.333		51	40-140			
bis(2-chloroisopropyl)Ether	1.84	0.333	mg/kg wet	3.333		55	40-140			
bis(2-Ethylhexyl)phthalate	3.14	0.333	mg/kg wet	3.333		94	40-140			
Butylbenzylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Carbazole	2.80	0.333	mg/kg wet	3.333		84	40-140			
Chrysene	2.63	0.167	mg/kg wet	3.333		79	40-140			
Dibenzo(a,h)Anthracene	2.67	0.167	mg/kg wet	3.333		80	40-140			
Dibenzofuran	2.09	0.333	mg/kg wet	3.333		63	40-140			
Diethylphthalate	2.55	0.333	mg/kg wet	3.333		77	40-140			
Dimethylphthalate	2.34	0.333	mg/kg wet	3.333		70	40-140			
Di-n-butylphthalate	3.04	0.333	mg/kg wet	3.333		91	40-140			
Di-n-octylphthalate	3.03	0.333	mg/kg wet	3.333		91	40-140			
Fluoranthene	2.83	0.333	mg/kg wet	3.333		85	40-140			
Fluorene	2.32	0.333	mg/kg wet	3.333		70	40-140			
Hexachlorobenzene	2.36	0.167	mg/kg wet	3.333		71	40-140			
Hexachlorobutadiene	1.74	0.333	mg/kg wet	3.333		52	40-140			
Hexachlorocyclopentadiene	1.57	1.67	mg/kg wet	3.333		47	40-140			
Hexachloroethane	1.71	0.333	mg/kg wet	3.333		51	40-140			
Indeno(1,2,3-cd)Pyrene	2.66	0.333	mg/kg wet	3.333		80	40-140			
Isophorone	1.91	0.333	mg/kg wet	3.333		57	40-140			
Naphthalene	1.81	0.333	mg/kg wet	3.333		54	40-140			
Nitrobenzene	1.82	0.333	mg/kg wet	3.333		55	40-140			
N-Nitrosodimethylamine	1.07	0.333	mg/kg wet	3.333		32	40-140			B-
N-Nitroso-Di-n-Propylamine	1.94	0.333	mg/kg wet	3.333		58	40-140			
N-nitrosodiphenylamine	2.46	0.333	mg/kg wet	3.333		74	40-140			
Pentachlorophenol	2.31	1.67	mg/kg wet	3.333		69	30-130			
Phenanthrene	2.57	0.333	mg/kg wet	3.333		77	40-140			
Phenol	2.04	0.333	mg/kg wet	3.333		61	30-130			
Pyrene	2.91	0.333	mg/kg wet	3.333		87	40-140			
Pyridine	1.09	1.67	mg/kg wet	3.333		33	40-140			B-
Surrogate: 1,2-Dichlorobenzene-d4	1.62		mg/kg wet	3.333		49	30-130			
Surrogate: 2,4,6-Tribromophenol	3.52		mg/kg wet	5.000		70	30-130			



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK62216 - 3546

Surrogate: 2-Chlorophenol-d4	2.90		mg/kg wet	5.000		58	30-130			
Surrogate: 2-Fluorobiphenyl	1.97		mg/kg wet	3.333		59	30-130			
Surrogate: 2-Fluorophenol	2.75		mg/kg wet	5.000		55	30-130			
Surrogate: Nitrobenzene-d5	1.92		mg/kg wet	3.333		58	30-130			
Surrogate: Phenol-d6	2.93		mg/kg wet	5.000		59	30-130			
Surrogate: p-Terphenyl-d14	2.84		mg/kg wet	3.333		85	30-130			

LCS Dup

B-

1,1-Biphenyl	2.15	0.333	mg/kg wet	3.333		65	40-140	10	30	
1,2,4-Trichlorobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	15	30	
1,2-Dichlorobenzene	2.04	0.333	mg/kg wet	3.333		61	40-140	19	30	
1,3-Dichlorobenzene	2.05	0.333	mg/kg wet	3.333		62	40-140	19	30	
1,4-Dichlorobenzene	2.04	0.333	mg/kg wet	3.333		61	40-140	18	30	
2,3,4,6-Tetrachlorophenol	2.11	1.67	mg/kg wet	3.333		63	30-130	3	30	
2,4,5-Trichlorophenol	2.58	0.333	mg/kg wet	3.333		77	30-130	7	30	
2,4,6-Trichlorophenol	2.31	0.333	mg/kg wet	3.333		69	30-130	9	30	
2,4-Dichlorophenol	2.30	0.333	mg/kg wet	3.333		69	30-130	15	30	
2,4-Dimethylphenol	2.25	0.333	mg/kg wet	3.333		68	30-130	14	30	
2,4-Dinitrophenol	2.00	1.67	mg/kg wet	3.333		60	30-130	3	30	
2,4-Dinitrotoluene	2.78	0.333	mg/kg wet	3.333		84	40-140	1	30	
2,6-Dinitrotoluene	2.49	0.333	mg/kg wet	3.333		75	40-140	2	30	
2-Chloronaphthalene	1.98	0.333	mg/kg wet	3.333		59	40-140	10	30	
2-Chlorophenol	2.22	0.333	mg/kg wet	3.333		67	30-130	20	30	
2-Methylnaphthalene	2.08	0.333	mg/kg wet	3.333		62	40-140	14	30	
2-Methylphenol	2.27	0.333	mg/kg wet	3.333		68	30-130	18	30	
2-Nitroaniline	2.20	0.333	mg/kg wet	3.333		66	40-140	5	30	
2-Nitrophenol	2.07	0.333	mg/kg wet	3.333		62	30-130	14	30	
3,3'-Dichlorobenzidine	1.86	0.667	mg/kg wet	3.333		56	40-140	4	30	
3+4-Methylphenol	4.45	0.667	mg/kg wet	6.667		67	30-130	19	30	
3-Nitroaniline	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
4,6-Dinitro-2-Methylphenol	2.27	1.67	mg/kg wet	3.333		68	30-130	2	30	
4-Bromophenyl-phenylether	2.32	0.333	mg/kg wet	3.333		70	40-140	3	30	
4-Chloro-3-Methylphenol	2.51	0.333	mg/kg wet	3.333		75	30-130	11	30	
4-Chloroaniline	2.02	0.667	mg/kg wet	3.333		61	40-140	8	30	
4-Chloro-phenyl-phenyl ether	2.31	0.333	mg/kg wet	3.333		69	40-140	6	30	
4-Nitroaniline	2.19	0.333	mg/kg wet	3.333		66	40-140	2	30	
4-Nitrophenol	2.00	1.67	mg/kg wet	3.333		60	30-130	2	30	
Acenaphthene	2.23	0.333	mg/kg wet	3.333		67	40-140	9	30	
Acenaphthylene	2.22	0.333	mg/kg wet	3.333		67	40-140	9	30	
Acetophenone	2.14	0.667	mg/kg wet	3.333		64	40-140	18	30	
Aniline	1.98	0.667	mg/kg wet	3.333		59	40-140	18	30	
Anthracene	2.65	0.333	mg/kg wet	3.333		80	40-140	0.5	30	
Azobenzene	2.25	0.333	mg/kg wet	3.333		68	40-140	2	30	
Benzo(a)anthracene	2.67	0.333	mg/kg wet	3.333		80	40-140	1	30	
Benzo(a)pyrene	2.79	0.167	mg/kg wet	3.333		84	40-140	2	30	
Benzo(b)fluoranthene	2.73	0.333	mg/kg wet	3.333		82	40-140	11	30	



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8270D Semi-Volatile Organic Compounds

Batch CK62216 - 3546

Benzo(g,h,i)perylene	2.58	0.333	mg/kg wet	3.333		77	40-140	0.5	30	
Benzo(k)fluoranthene	2.78	0.333	mg/kg wet	3.333		83	40-140	6	30	
Benzoic Acid	1.60	1.67	mg/kg wet	3.333		48	40-140	28	30	
Benzyl Alcohol	1.88	0.333	mg/kg wet	3.333		56	40-140	18	30	
bis(2-Chloroethoxy)methane	2.08	0.333	mg/kg wet	3.333		62	40-140	13	30	
bis(2-Chloroethyl)ether	2.01	0.333	mg/kg wet	3.333		60	40-140	17	30	
bis(2-chloroisopropyl)Ether	2.21	0.333	mg/kg wet	3.333		66	40-140	18	30	
bis(2-Ethylhexyl)phthalate	3.02	0.333	mg/kg wet	3.333		91	40-140	4	30	
Butylbenzylphthalate	2.90	0.333	mg/kg wet	3.333		87	40-140	5	30	
Carbazole	2.75	0.333	mg/kg wet	3.333		83	40-140	2	30	
Chrysene	2.56	0.167	mg/kg wet	3.333		77	40-140	3	30	
Dibenzo(a,h)Anthracene	2.68	0.167	mg/kg wet	3.333		80	40-140	0.2	30	
Dibenzofuran	2.27	0.333	mg/kg wet	3.333		68	40-140	8	30	
Diethylphthalate	2.57	0.333	mg/kg wet	3.333		77	40-140	0.8	30	
Dimethylphthalate	2.43	0.333	mg/kg wet	3.333		73	40-140	4	30	
Di-n-butylphthalate	2.94	0.333	mg/kg wet	3.333		88	40-140	3	30	
Di-n-octylphthalate	2.83	0.333	mg/kg wet	3.333		85	40-140	7	30	
Fluoranthene	2.77	0.333	mg/kg wet	3.333		83	40-140	2	30	
Fluorene	2.45	0.333	mg/kg wet	3.333		74	40-140	6	30	
Hexachlorobenzene	2.35	0.167	mg/kg wet	3.333		70	40-140	0.7	30	
Hexachlorobutadiene	2.02	0.333	mg/kg wet	3.333		61	40-140	15	30	
Hexachlorocyclopentadiene	1.81	1.67	mg/kg wet	3.333		54	40-140	14	30	
Hexachloroethane	2.03	0.333	mg/kg wet	3.333		61	40-140	17	30	
Indeno(1,2,3-cd)Pyrene	2.68	0.333	mg/kg wet	3.333		80	40-140	0.7	30	
Isophorone	2.20	0.333	mg/kg wet	3.333		66	40-140	14	30	
Naphthalene	2.09	0.333	mg/kg wet	3.333		63	40-140	14	30	
Nitrobenzene	2.08	0.333	mg/kg wet	3.333		62	40-140	13	30	
N-Nitrosodimethylamine	1.27	0.333	mg/kg wet	3.333		38	40-140	17	30	
N-Nitroso-Di-n-Propylamine	2.27	0.333	mg/kg wet	3.333		68	40-140	15	30	
N-nitrosodiphenylamine	2.49	0.333	mg/kg wet	3.333		75	40-140	1	30	
Pentachlorophenol	2.28	1.67	mg/kg wet	3.333		68	30-130	1	30	
Phenanthrene	2.57	0.333	mg/kg wet	3.333		77	40-140	0.3	30	
Phenol	2.45	0.333	mg/kg wet	3.333		73	30-130	18	30	
Pyrene	2.82	0.333	mg/kg wet	3.333		85	40-140	3	30	
Pyridine	1.35	1.67	mg/kg wet	3.333		40	40-140	21	30	
Surrogate: 1,2-Dichlorobenzene-d4	1.93		mg/kg wet	3.333		58	30-130			
Surrogate: 2,4,6-Tribromophenol	3.42		mg/kg wet	5.000		68	30-130			
Surrogate: 2-Chlorophenol-d4	3.36		mg/kg wet	5.000		67	30-130			
Surrogate: 2-Fluorobiphenyl	2.10		mg/kg wet	3.333		63	30-130			
Surrogate: 2-Fluorophenol	3.20		mg/kg wet	5.000		64	30-130			
Surrogate: Nitrobenzene-d5	2.13		mg/kg wet	3.333		64	30-130			
Surrogate: Phenol-d6	3.38		mg/kg wet	5.000		68	30-130			
Surrogate: p-Terphenyl-d14	2.60		mg/kg wet	3.333		78	30-130			

Classical Chemistry



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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Classical Chemistry

Batch CK62321 - TCN Prep

Blank

Total Cyanide	ND	1.00	mg/kg wet							
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LCS

Total Cyanide	5.02	1.00	mg/kg wet	5.015		100	90-110			
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Reference

Total Cyanide	50.3	4.97	mg/kg wet	48.40		104	36.1577-206.6 12			
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Reference

Total Cyanide	51.2	4.94	mg/kg wet	48.40		106	36.1577-206.6 12			
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CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

Notes and Definitions

- Z18 Temperature is not within 23 +/-2 °C.
- Z-08 See Attached
- U Analyte included in the analysis, but not detected
- Q Calibration required quadratic regression (Q).
- J Reported between MDL and MRL
- 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+).
- B- Blank Spike recovery is below lower 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



CERTIFICATE OF ANALYSIS

Client Name: Charter Contracting Company
Client Project ID: Allens Ave

ESS Laboratory Work Order: 1611645

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095



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Mass Certification - MA-00071
Conn Certification - PH-0520

Visit our website: www.sterlinganalytical.com

Report Date November 23, 2016

Customer	Contact	Laboratory Supervisor	eMail
ESS Laboratory	S. Morrell	Madhu Shah	customerservice@sterlinganalytical.com
Sample Description Analysis of Soil Samples			

Samples Analyzed

Enclosed are Report No(s): 58086..58088

Blank = <0.05ppm

LCS Lo Check 0.100 = 0.111ppm

ICV 1.00 = 1.03ppm

Thank you for your business

Madhu Shah, Laboratory Supervisor

11/23/2016

Date

ALL the information contained in this report has been reviewed for accuracy and checked against all quality control requirements outlined in each applicable method.

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Sample Description	Source	Taken/Time	Received
58086 1611645-01	ESS Laboratory	11/22/16	11/23/16

Parameter	Results	MDL	Method	Analyzed/Time	Tech
Sulfur, Total	2,350 mg/kg	100.00	SW 6010 (1)	11/23/16	dfp

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		Rush <input checked="" type="checkbox"/> 24	ESS Lab #	1611645								
Regulatory State		Is this project for any of the following? <input type="checkbox"/> OCT RCP <input type="checkbox"/> MA MCP <input type="checkbox"/> ORGP	Reporting Limits	<input type="checkbox"/> Limit Checker <input type="checkbox"/> Standard Excl								
Company Name	Project #	Project Name	Analysis									
Charters	8-1495	642 Alloy Ave	✓ TELP test									
Contact Person	Address	Address	✓ VOC									
Aya Miller	500 Harrison Ave	4R	✓ Metals RCRS									
City	State	Zip Code	✓ HPI									
Boston	MA	02117	✓ SVOC									
Telephone Number	FAX Number	Email Address	✓									
857-245-6800		amiller@charters	✓									
ESS Lab ID	Collection Date	Collection Time	Sample Matrix	Sample ID								
1	11/22/16	14:00	soil	Charters-642								
Sample Type	Sample Matrix	Sample ID										
comp	soil	Charters-642										
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-ZnAc2, NaOH	9-NH4Cl	10-DI H2O	11-Ascorbic Acid	12-Other

Laboratory Use Only

Cooler Present: yes

Seals Intact: nlc

Cooler Temperature: 12.6 °C

Relinquished By: (Signature, Date & Time) Tina Bullack 11/22/16 2:07 PM

Relinquished By: (Signature, Date & Time) Ryhyant 11/22/16 1427

Relinquished By: (Signature, Date & Time) _____

Relinquished By: (Signature, Date & Time) _____

Sampled by: Tina Bullack

Comments: _____

Number of Containers per Sample: _____

Please specify "Other" preservative and containers types in this space

Received By: (Signature, Date & Time) _____

Received By: (Signature, Date & Time) _____

Sample No. 1611645-01
Sample Date: 11/22/2016
Sample Time: 14:00
ClientSample: Charter - 642

CAS Number	Method Name	Analyte	Units	
7439-92-1	1311 TCLP Metals	Lead	mg/L	2.23
630-20-6	5035/8260B Volatile Organic Compounds / Methanol	1,1,1,2-Tetrachloroethane	mg/kg dry	<0.145
71-55-6	5035/8260B Volatile Organic Compounds / Methanol	1,1,1-Trichloroethane	mg/kg dry	<0.145
79-34-5	5035/8260B Volatile Organic Compounds / Methanol	1,1,2,2-Tetrachloroethane	mg/kg dry	<0.145
79-00-5	5035/8260B Volatile Organic Compounds / Methanol	1,1,2-Trichloroethane	mg/kg dry	<0.145
75-34-3	5035/8260B Volatile Organic Compounds / Methanol	1,1-Dichloroethane	mg/kg dry	<0.145
75-35-4	5035/8260B Volatile Organic Compounds / Methanol	1,1-Dichloroethene	mg/kg dry	<0.145
563-58-6	5035/8260B Volatile Organic Compounds / Methanol	1,1-Dichloropropene	mg/kg dry	<0.145
87-61-6	5035/8260B Volatile Organic Compounds / Methanol	1,2,3-Trichlorobenzene	mg/kg dry	<0.145
96-18-4	5035/8260B Volatile Organic Compounds / Methanol	1,2,3-Trichloropropane	mg/kg dry	<0.145
120-82-1	5035/8260B Volatile Organic Compounds / Methanol	1,2,4-Trichlorobenzene	mg/kg dry	<0.145
95-63-6	5035/8260B Volatile Organic Compounds / Methanol	1,2,4-Trimethylbenzene	mg/kg dry	0.0377
96-12-8	5035/8260B Volatile Organic Compounds / Methanol	1,2-Dibromo-3-Chloropropane	mg/kg dry	<0.725
106-93-4	5035/8260B Volatile Organic Compounds / Methanol	1,2-Dibromoethane	mg/kg dry	<0.145
95-50-1	5035/8260B Volatile Organic Compounds / Methanol	1,2-Dichlorobenzene	mg/kg dry	<0.145
107-06-2	5035/8260B Volatile Organic Compounds / Methanol	1,2-Dichloroethane	mg/kg dry	<0.145
78-87-5	5035/8260B Volatile Organic Compounds / Methanol	1,2-Dichloropropane	mg/kg dry	<0.145
108-67-8	5035/8260B Volatile Organic Compounds / Methanol	1,3,5-Trimethylbenzene	mg/kg dry	<0.145
541-73-1	5035/8260B Volatile Organic Compounds / Methanol	1,3-Dichlorobenzene	mg/kg dry	<0.145
142-28-9	5035/8260B Volatile Organic Compounds / Methanol	1,3-Dichloropropane	mg/kg dry	<0.145
106-46-7	5035/8260B Volatile Organic Compounds / Methanol	1,4-Dichlorobenzene	mg/kg dry	<0.145
123-91-1	5035/8260B Volatile Organic Compounds / Methanol	1,4-Dioxane - Screen	mg/kg dry	<29
544-10-5	5035/8260B Volatile Organic Compounds / Methanol	1-Chlorohexane	mg/kg dry	<0.145
594-20-7	5035/8260B Volatile Organic Compounds / Methanol	2,2-Dichloropropane	mg/kg dry	<0.145
78-93-3	5035/8260B Volatile Organic Compounds / Methanol	2-Butanone	mg/kg dry	<0.725
95-49-8	5035/8260B Volatile Organic Compounds / Methanol	2-Chlorotoluene	mg/kg dry	<0.145
591-78-6	5035/8260B Volatile Organic Compounds / Methanol	2-Hexanone	mg/kg dry	<0.725
106-43-4	5035/8260B Volatile Organic Compounds / Methanol	4-Chlorotoluene	mg/kg dry	<0.145
99-87-6	5035/8260B Volatile Organic Compounds / Methanol	4-Isopropyltoluene	mg/kg dry	<0.145
108-10-1	5035/8260B Volatile Organic Compounds / Methanol	4-Methyl-2-Pentanone	mg/kg dry	<0.725
67-64-1	5035/8260B Volatile Organic Compounds / Methanol	Acetone	mg/kg dry	<0.725
71-43-2	5035/8260B Volatile Organic Compounds / Methanol	Benzene	mg/kg dry	0.058
108-86-1	5035/8260B Volatile Organic Compounds / Methanol	Bromobenzene	mg/kg dry	<0.145
74-97-5	5035/8260B Volatile Organic Compounds / Methanol	Bromochloromethane	mg/kg dry	<0.145
75-27-4	5035/8260B Volatile Organic Compounds / Methanol	Bromodichloromethane	mg/kg dry	<0.145
75-25-2	5035/8260B Volatile Organic Compounds / Methanol	Bromofom	mg/kg dry	<0.145
74-83-9	5035/8260B Volatile Organic Compounds / Methanol	Bromomethane	mg/kg dry	<0.145
75-15-0	5035/8260B Volatile Organic Compounds / Methanol	Carbon Disulfide	mg/kg dry	<0.145
56-23-5	5035/8260B Volatile Organic Compounds / Methanol	Carbon Tetrachloride	mg/kg dry	<0.145
108-90-7	5035/8260B Volatile Organic Compounds / Methanol	Chlorobenzene	mg/kg dry	<0.145
75-00-3	5035/8260B Volatile Organic Compounds / Methanol	Chloroethane	mg/kg dry	<0.145
67-66-3	5035/8260B Volatile Organic Compounds / Methanol	Chloroform	mg/kg dry	<0.145
74-87-3	5035/8260B Volatile Organic Compounds / Methanol	Chloromethane	mg/kg dry	<0.145
156-59-2	5035/8260B Volatile Organic Compounds / Methanol	cis-1,2-Dichloroethene	mg/kg dry	<0.145
10061-01-5	5035/8260B Volatile Organic Compounds / Methanol	cis-1,3-Dichloropropene	mg/kg dry	<0.145
124-48-1	5035/8260B Volatile Organic Compounds / Methanol	Dibromochloromethane	mg/kg dry	<0.145
74-95-3	5035/8260B Volatile Organic Compounds / Methanol	Dibromomethane	mg/kg dry	<0.145
75-71-8	5035/8260B Volatile Organic Compounds / Methanol	Dichlorodifluoromethane	mg/kg dry	<0.145
60-29-7	5035/8260B Volatile Organic Compounds / Methanol	Diethyl Ether	mg/kg dry	<0.145
108-20-3	5035/8260B Volatile Organic Compounds / Methanol	Di-isopropyl ether	mg/kg dry	<0.145
637-92-3	5035/8260B Volatile Organic Compounds / Methanol	Ethyl tertiary-butyl ether	mg/kg dry	<0.145
100-41-4	5035/8260B Volatile Organic Compounds / Methanol	Ethylbenzene	mg/kg dry	0.0218
87-68-3	5035/8260B Volatile Organic Compounds / Methanol	Hexachlorobutadiene	mg/kg dry	<0.145
98-82-8	5035/8260B Volatile Organic Compounds / Methanol	Isopropylbenzene	mg/kg dry	<0.145
1634-04-4	5035/8260B Volatile Organic Compounds / Methanol	Methyl tert-Butyl Ether	mg/kg dry	<0.145
75-09-2	5035/8260B Volatile Organic Compounds / Methanol	Methylene Chloride	mg/kg dry	<0.29
91-20-3	5035/8260B Volatile Organic Compounds / Methanol	Naphthalene	mg/kg dry	0.189
104-51-8	5035/8260B Volatile Organic Compounds / Methanol	n-Butylbenzene	mg/kg dry	<0.145
103-65-1	5035/8260B Volatile Organic Compounds / Methanol	n-Propylbenzene	mg/kg dry	<0.145
135-98-8	5035/8260B Volatile Organic Compounds / Methanol	sec-Butylbenzene	mg/kg dry	<0.145
100-42-5	5035/8260B Volatile Organic Compounds / Methanol	Styrene	mg/kg dry	<0.145
98-06-6	5035/8260B Volatile Organic Compounds / Methanol	tert-Butylbenzene	mg/kg dry	<0.145
994-05-8	5035/8260B Volatile Organic Compounds / Methanol	Tertiary-amyl methyl ether	mg/kg dry	<0.145
127-18-4	5035/8260B Volatile Organic Compounds / Methanol	Tetrachloroethene	mg/kg dry	<0.145
109-99-9	5035/8260B Volatile Organic Compounds / Methanol	Tetrahydrofuran	mg/kg dry	<0.725
108-88-3	5035/8260B Volatile Organic Compounds / Methanol	Toluene	mg/kg dry	0.0696
156-60-5	5035/8260B Volatile Organic Compounds / Methanol	trans-1,2-Dichloroethene	mg/kg dry	<0.145
10061-02-6	5035/8260B Volatile Organic Compounds / Methanol	trans-1,3-Dichloropropene	mg/kg dry	<0.145
79-01-6	5035/8260B Volatile Organic Compounds / Methanol	Trichloroethene	mg/kg dry	<0.145
75-69-4	5035/8260B Volatile Organic Compounds / Methanol	Trichlorofluoromethane	mg/kg dry	<0.145
108-05-4	5035/8260B Volatile Organic Compounds / Methanol	Vinyl Acetate	mg/kg dry	<0.145
75-01-4	5035/8260B Volatile Organic Compounds / Methanol	Vinyl Chloride	mg/kg dry	<0.145
95-47-6	5035/8260B Volatile Organic Compounds / Methanol	Xylene O	mg/kg dry	0.0392
179601-23-1	5035/8260B Volatile Organic Compounds / Methanol	Xylene P,M	mg/kg dry	0.0609
1330-20-7	5035/8260B Volatile Organic Compounds / Methanol	Xylenes (Total)	mg/kg dry	<0.29
TPH	8100M Total Petroleum Hydrocarbons	Total Petroleum Hydrocarbons	mg/kg dry	273
92-52-4	8270D Semi-Volatile Organic Compounds	1,1-Biphenyl	mg/kg dry	<0.366
120-82-1	8270D Semi-Volatile Organic Compounds	1,2,4-Trichlorobenzene	mg/kg dry	<0.366
95-50-1	8270D Semi-Volatile Organic Compounds	1,2-Dichlorobenzene	mg/kg dry	<0.366
541-73-1	8270D Semi-Volatile Organic Compounds	1,3-Dichlorobenzene	mg/kg dry	<0.366

106-46-7	8270D Semi-Volatile Organic Compounds	1,4-Dichlorobenzene	mg/kg dry	<0.366
58-90-2	8270D Semi-Volatile Organic Compounds	2,3,4,6-Tetrachlorophenol	mg/kg dry	<1.84
95-95-4	8270D Semi-Volatile Organic Compounds	2,4,5-Trichlorophenol	mg/kg dry	<0.366
88-06-2	8270D Semi-Volatile Organic Compounds	2,4,6-Trichlorophenol	mg/kg dry	<0.366
120-83-2	8270D Semi-Volatile Organic Compounds	2,4-Dichlorophenol	mg/kg dry	<0.366
105-67-9	8270D Semi-Volatile Organic Compounds	2,4-Dimethylphenol	mg/kg dry	<0.366
51-28-5	8270D Semi-Volatile Organic Compounds	2,4-Dinitrophenol	mg/kg dry	<1.84
121-14-2	8270D Semi-Volatile Organic Compounds	2,4-Dinitrotoluene	mg/kg dry	<0.366
606-20-2	8270D Semi-Volatile Organic Compounds	2,6-Dinitrotoluene	mg/kg dry	<0.366
91-58-7	8270D Semi-Volatile Organic Compounds	2-Chloronaphthalene	mg/kg dry	<0.366
95-57-8	8270D Semi-Volatile Organic Compounds	2-Chlorophenol	mg/kg dry	<0.366
91-57-6	8270D Semi-Volatile Organic Compounds	2-Methylnaphthalene	mg/kg dry	0.369
95-48-7	8270D Semi-Volatile Organic Compounds	2-Methylphenol	mg/kg dry	<0.366
88-74-4	8270D Semi-Volatile Organic Compounds	2-Nitroaniline	mg/kg dry	<0.366
88-75-5	8270D Semi-Volatile Organic Compounds	2-Nitrophenol	mg/kg dry	<0.366
91-94-1	8270D Semi-Volatile Organic Compounds	3,3'-Dichlorobenzidine	mg/kg dry	<0.733
106-44-5	8270D Semi-Volatile Organic Compounds	3+4-Methylphenol	mg/kg dry	<0.733
99-09-2	8270D Semi-Volatile Organic Compounds	3-Nitroaniline	mg/kg dry	<0.366
534-52-1	8270D Semi-Volatile Organic Compounds	4,6-Dinitro-2-Methylphenol	mg/kg dry	<1.84
101-55-3	8270D Semi-Volatile Organic Compounds	4-Bromophenyl-phenylether	mg/kg dry	<0.366
59-50-7	8270D Semi-Volatile Organic Compounds	4-Chloro-3-Methylphenol	mg/kg dry	<0.366
106-47-8	8270D Semi-Volatile Organic Compounds	4-Chloroaniline	mg/kg dry	<0.733
7005-72-3	8270D Semi-Volatile Organic Compounds	4-Chloro-phenyl-phenyl ether	mg/kg dry	<0.366
100-01-6	8270D Semi-Volatile Organic Compounds	4-Nitroaniline	mg/kg dry	<0.366
100-02-7	8270D Semi-Volatile Organic Compounds	4-Nitrophenol	mg/kg dry	<1.84
83-32-9	8270D Semi-Volatile Organic Compounds	Acenaphthene	mg/kg dry	<0.366
208-96-8	8270D Semi-Volatile Organic Compounds	Acenaphthylene	mg/kg dry	<0.366
98-86-2	8270D Semi-Volatile Organic Compounds	Acetophenone	mg/kg dry	<0.733
62-53-3	8270D Semi-Volatile Organic Compounds	Aniline	mg/kg dry	<0.733
120-12-7	8270D Semi-Volatile Organic Compounds	Anthracene	mg/kg dry	<0.366
103-33-3	8270D Semi-Volatile Organic Compounds	Azobenzene	mg/kg dry	<0.366
56-55-3	8270D Semi-Volatile Organic Compounds	Benzo(a)anthracene	mg/kg dry	0.901
50-32-8	8270D Semi-Volatile Organic Compounds	Benzo(a)pyrene	mg/kg dry	0.837
205-99-2	8270D Semi-Volatile Organic Compounds	Benzo(b)fluoranthene	mg/kg dry	1.43
191-24-2	8270D Semi-Volatile Organic Compounds	Benzo(g,h,i)perylene	mg/kg dry	<0.366
207-08-9	8270D Semi-Volatile Organic Compounds	Benzo(k)fluoranthene	mg/kg dry	0.513
65-85-0	8270D Semi-Volatile Organic Compounds	Benzoic Acid	mg/kg dry	<1.84
100-51-6	8270D Semi-Volatile Organic Compounds	Benzyl Alcohol	mg/kg dry	<0.366
111-91-1	8270D Semi-Volatile Organic Compounds	bis(2-Chloroethoxy)methane	mg/kg dry	<0.366
111-44-4	8270D Semi-Volatile Organic Compounds	bis(2-Chloroethyl)ether	mg/kg dry	<0.366
39638-32-9	8270D Semi-Volatile Organic Compounds	bis(2-chloroisopropyl)Ether	mg/kg dry	<0.366
117-81-7	8270D Semi-Volatile Organic Compounds	bis(2-Ethylhexyl)phthalate	mg/kg dry	<0.366
85-68-7	8270D Semi-Volatile Organic Compounds	Butylbenzylphthalate	mg/kg dry	<0.366
86-74-8	8270D Semi-Volatile Organic Compounds	Carbazole	mg/kg dry	<0.366
218-01-9	8270D Semi-Volatile Organic Compounds	Chrysene	mg/kg dry	0.969
53-70-3	8270D Semi-Volatile Organic Compounds	Dibenzo(a,h)Anthracene	mg/kg dry	<0.184
132-64-9	8270D Semi-Volatile Organic Compounds	Dibenzofuran	mg/kg dry	<0.366
84-66-2	8270D Semi-Volatile Organic Compounds	Diethylphthalate	mg/kg dry	<0.366
131-11-3	8270D Semi-Volatile Organic Compounds	Dimethylphthalate	mg/kg dry	<0.366
84-74-2	8270D Semi-Volatile Organic Compounds	Di-n-butylphthalate	mg/kg dry	<0.366
117-84-0	8270D Semi-Volatile Organic Compounds	Di-n-octylphthalate	mg/kg dry	<0.366
206-44-0	8270D Semi-Volatile Organic Compounds	Fluoranthene	mg/kg dry	1.79
86-73-7	8270D Semi-Volatile Organic Compounds	Fluorene	mg/kg dry	<0.366
118-74-1	8270D Semi-Volatile Organic Compounds	Hexachlorobenzene	mg/kg dry	<0.184
87-68-3	8270D Semi-Volatile Organic Compounds	Hexachlorobutadiene	mg/kg dry	<0.366
77-47-4	8270D Semi-Volatile Organic Compounds	Hexachlorocyclopentadiene	mg/kg dry	<1.84
67-72-1	8270D Semi-Volatile Organic Compounds	Hexachloroethane	mg/kg dry	<0.366
193-39-5	8270D Semi-Volatile Organic Compounds	Indeno(1,2,3-cd)Pyrene	mg/kg dry	<0.366
78-59-1	8270D Semi-Volatile Organic Compounds	Isophorone	mg/kg dry	<0.366
91-20-3	8270D Semi-Volatile Organic Compounds	Naphthalene	mg/kg dry	1.17
98-95-3	8270D Semi-Volatile Organic Compounds	Nitrobenzene	mg/kg dry	<0.366
62-75-9	8270D Semi-Volatile Organic Compounds	N-Nitrosodimethylamine	mg/kg dry	<0.366
621-64-7	8270D Semi-Volatile Organic Compounds	N-Nitroso-Di-n-Propylamine	mg/kg dry	<0.366
86-30-6	8270D Semi-Volatile Organic Compounds	N-nitrosodiphenylamine	mg/kg dry	<0.366
87-86-5	8270D Semi-Volatile Organic Compounds	Pentachlorophenol	mg/kg dry	<1.84
85-01-8	8270D Semi-Volatile Organic Compounds	Phenanthrene	mg/kg dry	0.869
108-95-2	8270D Semi-Volatile Organic Compounds	Phenol	mg/kg dry	<0.366
129-00-0	8270D Semi-Volatile Organic Compounds	Pyrene	mg/kg dry	1.62
110-86-1	8270D Semi-Volatile Organic Compounds	Pyridine	mg/kg dry	<1.84
7704-34-9	Classical Chemistry	Sulfur	mg/kg	See Attached
57-12-5	Classical Chemistry	Total Cyanide	mg/kg dry	18.3
TCLP	TCLP Extraction by 1311	Temperature (Max C)	°C	21.9
	TCLP Extraction by 1311	Temperature (Min C)	°C	19.6
	TCLP Extraction by 1311	Temperature (Range)	°C	Temperature is not within 23 +/-2 °C.
7440-38-2	Total Metals	Arsenic	mg/kg dry	4.04
7440-39-3	Total Metals	Barium	mg/kg dry	28.8
7440-43-9	Total Metals	Cadmium	mg/kg dry	<0.41
7440-47-3	Total Metals	Chromium	mg/kg dry	7.89
7439-92-1	Total Metals	Lead	mg/kg dry	372
7439-97-6	Total Metals	Mercury	mg/kg dry	0.081
7782-49-2	Total Metals	Selenium	mg/kg dry	<0.41
7440-22-4	Total Metals	Silver	mg/kg dry	<0.41



APPENDIX H

B-08 SOIL REMOVAL CONFIRMATORY SAMPLING RESULTS



CERTIFICATE OF ANALYSIS

Christopher Soldi
GZA GeoEnvironmental, Inc.
5 Commerce Park North
Bedford, NH 03110

RE: Holder 18/21 Capping Project (03.0033554.00 Task 19)
ESS Laboratory Work Order Number: 1609272

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, Sep 16, 2016

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 NELAC Standards, A2LA 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: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

SAMPLE RECEIPT

The following samples were received on September 14, 2016 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1609272-01	CS-01-09142016	Soil	8100M, 8270D
1609272-02	CS-02-09142016	Soil	8100M, 8270D
1609272-03	CS-03-09142016	Soil	8100M, 8270D
1609272-04	CS-04-09142016	Soil	8100M, 8270D
1609272-05	CS-05-09142016	Soil	8100M, 8270D



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

PROJECT NARRATIVE

8270D Polynuclear Aromatic Hydrocarbons

1609272-03

Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).

Naphthalene-d8 (46% @ 50-200%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[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: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

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
- 8015D - 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: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-01-09142016
Date Sampled: 09/14/16 10:48
Percent Solids: 95
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/14/16 12:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	73.0 (40.2)		8100M		1	09/14/16 18:39	CZI0175	CI61406
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		84 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-01-09142016
Date Sampled: 09/14/16 10:48
Percent Solids: 95
Initial Volume: 14.4
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 9/14/16 12:55

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Naphthalene	ND (0.367)		8270D		1	09/14/16 19:23	CZI0183	CI61407
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>		61 %		30-130				
<i>Surrogate: 2-Fluorobiphenyl</i>		70 %		30-130				
<i>Surrogate: Nitrobenzene-d5</i>		67 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		89 %		30-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-02-09142016
Date Sampled: 09/14/16 10:51
Percent Solids: 95
Initial Volume: 19.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/14/16 12:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	986 (41.0)		8100M		1	09/14/16 20:39	CZI0175	CI61406
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		99 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Holder 18/21 Capping Project
 Client Sample ID: CS-02-09142016
 Date Sampled: 09/14/16 10:51
 Percent Solids: 95
 Initial Volume: 14.4
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1609272
 ESS Laboratory Sample ID: 1609272-02
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 9/14/16 12:55

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Naphthalene	3.16 (0.364)		8270D		1	09/14/16 19:58	CZI0183	CI61407

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	59 %		30-130
<i>Surrogate: 2-Fluorobiphenyl</i>	68 %		30-130
<i>Surrogate: Nitrobenzene-d5</i>	61 %		30-130
<i>Surrogate: p-Terphenyl-d14</i>	65 %		30-130



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-03-09142016
Date Sampled: 09/14/16 10:55
Percent Solids: 95
Initial Volume: 19.7
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/14/16 12:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	2130 (40.0)		8100M		1	09/14/16 21:19	CZI0175	CI61406
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		68 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Holder 18/21 Capping Project
 Client Sample ID: CS-03-09142016
 Date Sampled: 09/14/16 10:55
 Percent Solids: 95
 Initial Volume: 14.4
 Final Volume: 1
 Extraction Method: 3546

ESS Laboratory Work Order: 1609272
 ESS Laboratory Sample ID: 1609272-03
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 9/14/16 12:55

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Naphthalene	957 (72.8)		8270D		100	09/16/16 2:51	CZI0183	CI61407
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>		49 %		30-130				
<i>Surrogate: 2-Fluorobiphenyl</i>		64 %		30-130				
<i>Surrogate: Nitrobenzene-d5</i>		65 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		57 %		30-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-04-09142016
Date Sampled: 09/14/16 10:58
Percent Solids: 95
Initial Volume: 20.2
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/14/16 12:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	2090 (39.1)		8100M		1	09/14/16 21:59	CZI0175	CI61406
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		62 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
 Client Project ID: Holder 18/21 Capping Project
 Client Sample ID: CS-04-09142016
 Date Sampled: 09/14/16 10:58
 Percent Solids: 95
 Initial Volume: 14.3
 Final Volume: 0.5
 Extraction Method: 3546

ESS Laboratory Work Order: 1609272
 ESS Laboratory Sample ID: 1609272-04
 Sample Matrix: Soil
 Units: mg/kg dry
 Analyst: TJ
 Prepared: 9/14/16 12:55

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Naphthalene	20.1 (3.68)		8270D		10	09/16/16 3:27	CZI0183	CI61407
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>		51 %		30-130				
<i>Surrogate: 2-Fluorobiphenyl</i>		49 %		30-130				
<i>Surrogate: Nitrobenzene-d5</i>		52 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		56 %		30-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-05-09142016
Date Sampled: 09/14/16 11:00
Percent Solids: 90
Initial Volume: 20.5
Final Volume: 1
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: ZLC
Prepared: 9/14/16 12:45

8100M Total Petroleum Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Total Petroleum Hydrocarbons	ND (40.6)		8100M		1	09/14/16 22:39	CZI0175	CI61406
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: O-Terphenyl</i>		91 %		40-140				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project
Client Sample ID: CS-05-09142016
Date Sampled: 09/14/16 11:00
Percent Solids: 90
Initial Volume: 14.3
Final Volume: 0.5
Extraction Method: 3546

ESS Laboratory Work Order: 1609272
ESS Laboratory Sample ID: 1609272-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: TJ
Prepared: 9/14/16 12:55

8270D Polynuclear Aromatic Hydrocarbons

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Naphthalene	2.15 (0.388)		8270D		1	09/16/16 4:03	CZI0193	CI61407
		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>		66 %		30-130				
<i>Surrogate: 2-Fluorobiphenyl</i>		69 %		30-130				
<i>Surrogate: Nitrobenzene-d5</i>		73 %		30-130				
<i>Surrogate: p-Terphenyl-d14</i>		96 %		30-130				



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch C161406 - 3546

Blank

Decane (C10)	ND	0.2	mg/kg wet
Docosane (C22)	ND	0.2	mg/kg wet
Dodecane (C12)	ND	0.2	mg/kg wet
Eicosane (C20)	ND	0.2	mg/kg wet
Hexacosane (C26)	ND	0.2	mg/kg wet
Hexadecane (C16)	ND	0.2	mg/kg wet
Nonadecane (C19)	ND	0.2	mg/kg wet
Nonane (C9)	ND	0.2	mg/kg wet
Octacosane (C28)	ND	0.2	mg/kg wet
Octadecane (C18)	ND	0.2	mg/kg wet
Tetracosane (C24)	ND	0.2	mg/kg wet
Tetradecane (C14)	ND	0.2	mg/kg wet
Total Petroleum Hydrocarbons	ND	37.5	mg/kg wet
Triacontane (C30)	ND	0.2	mg/kg wet

Surrogate: O-Terphenyl 4.90 mg/kg wet 5.000 98 40-140

LCS

Decane (C10)	1.8	0.2	mg/kg wet	2.500	71	40-140
Docosane (C22)	2.2	0.2	mg/kg wet	2.500	86	40-140
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500	73	40-140
Eicosane (C20)	2.2	0.2	mg/kg wet	2.500	87	40-140
Hexacosane (C26)	2.2	0.2	mg/kg wet	2.500	86	40-140
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500	82	40-140
Nonadecane (C19)	2.0	0.2	mg/kg wet	2.500	78	40-140
Nonane (C9)	1.6	0.2	mg/kg wet	2.500	62	30-140
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500	88	40-140
Octadecane (C18)	2.1	0.2	mg/kg wet	2.500	82	40-140
Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500	86	40-140
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500	74	40-140
Total Petroleum Hydrocarbons	27.8	37.5	mg/kg wet	35.00	80	40-140
Triacontane (C30)	2.2	0.2	mg/kg wet	2.500	89	40-140

Surrogate: O-Terphenyl 5.07 mg/kg wet 5.000 101 40-140

LCS Dup

Decane (C10)	1.8	0.2	mg/kg wet	2.500	71	40-140	0.8	25
Docosane (C22)	2.1	0.2	mg/kg wet	2.500	85	40-140	1	25
Dodecane (C12)	1.8	0.2	mg/kg wet	2.500	73	40-140	0.09	25
Eicosane (C20)	2.1	0.2	mg/kg wet	2.500	85	40-140	2	25
Hexacosane (C26)	2.1	0.2	mg/kg wet	2.500	85	40-140	1	25
Hexadecane (C16)	2.0	0.2	mg/kg wet	2.500	81	40-140	0.8	25
Nonadecane (C19)	1.9	0.2	mg/kg wet	2.500	77	40-140	2	25
Nonane (C9)	1.5	0.2	mg/kg wet	2.500	61	30-140	2	25
Octacosane (C28)	2.2	0.2	mg/kg wet	2.500	86	40-140	2	25
Octadecane (C18)	2.0	0.2	mg/kg wet	2.500	81	40-140	2	25



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8100M Total Petroleum Hydrocarbons

Batch CI61406 - 3546

Tetracosane (C24)	2.1	0.2	mg/kg wet	2.500		84	40-140	1	25	
Tetradecane (C14)	1.9	0.2	mg/kg wet	2.500		75	40-140	2	25	
Total Petroleum Hydrocarbons	27.5	37.5	mg/kg wet	35.00		78	40-140	1	25	
Triacotane (C30)	2.2	0.2	mg/kg wet	2.500		88	40-140	1	25	

Surrogate: *O*-Terphenyl 5.00 mg/kg wet 5.000 100 40-140

8270D Polynuclear Aromatic Hydrocarbons

Batch CI61407 - 3546

Blank										
Naphthalene	ND	0.333	mg/kg wet							
Surrogate: 1,2-Dichlorobenzene-d4	2.13		mg/kg wet	3.333		64	30-130			
Surrogate: 2-Fluorobiphenyl	2.15		mg/kg wet	3.333		65	30-130			
Surrogate: Nitrobenzene-d5	2.14		mg/kg wet	3.333		64	30-130			
Surrogate: <i>p</i> -Terphenyl-d14	2.98		mg/kg wet	3.333		89	30-130			

LCS										
Naphthalene	2.17	0.333	mg/kg wet	3.333		65	40-140			
Surrogate: 1,2-Dichlorobenzene-d4	2.11		mg/kg wet	3.333		63	30-130			
Surrogate: 2-Fluorobiphenyl	2.30		mg/kg wet	3.333		69	30-130			
Surrogate: Nitrobenzene-d5	2.29		mg/kg wet	3.333		69	30-130			
Surrogate: <i>p</i> -Terphenyl-d14	2.89		mg/kg wet	3.333		87	30-130			

LCS Dup										
Naphthalene	2.24	0.333	mg/kg wet	3.333		67	40-140	3	30	
Surrogate: 1,2-Dichlorobenzene-d4	2.22		mg/kg wet	3.333		67	30-130			
Surrogate: 2-Fluorobiphenyl	2.34		mg/kg wet	3.333		70	30-130			
Surrogate: Nitrobenzene-d5	2.26		mg/kg wet	3.333		68	30-130			
Surrogate: <i>p</i> -Terphenyl-d14	3.08		mg/kg wet	3.333		92	30-130			



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

Notes and Definitions

- U Analyte included in the analysis, but not detected
- IM Internal Standard(s) outside of criteria due to matrix (UCM/coelution is present) (IM).
- 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



CERTIFICATE OF ANALYSIS

Client Name: GZA GeoEnvironmental, Inc.
Client Project ID: Holder 18/21 Capping Project

ESS Laboratory Work Order: 1609272

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/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

ESS Laboratory

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

Turn Time Standard (Other) 48hr TAT
 Regulatory State: MA (R) CT NH NJ NY ME Other _____
 Is this project for any of the following: (please circle)
 MA-MCP Navy USACE CT DEP Other _____

Project # 03-0033554-0019 Task Holder P/dsl Capping Project
 Address 5 Commerce Drive North Suite 201 PO # _____
 City Bedford State NH Zip 03110
 email: Christopher.Soldi@qta.com

ESS Lab # 1609272
 Reporting Limits - RIDEM 1/C - DEC

Electronic Deliverables Excel Access (PDF)

ESS Lab ID	Date	Collection Time	Grab-G Composite-C	Matrix	Sample ID	Pres Code	# of Containers	Type of Container	Vol of Container	Analysis
1	9/14/16	1048	G	S	CS-01-09142016	1	1	AG	40L	X
2	9/14/16	1051	G	S	CS-02-09142016	1	1	AG	40L	X
3	9/14/16	1055	G	S	CS-03-09142016	1	1	AG	40L	X
4	9/14/16	1058	G	S	CS-04-09142016	1	1	AG	40L	X
5	9/14/16	1100	G	S	CS-05-09142016	1	1	AG	40L	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

Preservation Code: 1-NP, 2-HCl, 3-H2SO4, 4-HNO3, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-_____

Sampled by: DS

Comments: 48hr TAT; National Grid Pricing

Relinquished by: (Signature, Date & Time)

Relinquished by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Received by: (Signature, Date & Time)

Please fax to the laboratory all charges to Chain of Custody

1 (White) Lab Copy

2 (Yellow) Client Receipt

* By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VIIA



APPENDIX I

GEOSYNTHETIC LINER INSTALLATION QA/QC DATA



Date: 2016-09-24

Mail To:
Carl Burdick
Chenango Contracting
29 Arbutus Road
Johnston City , NY , 13790

Bill To:

Chenango Contracting

e-mail:mbystrak@chenangocontracting

Dear Mr. Burdick,

Thank you for consulting with TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

Project:	National Grid
TRI Job Reference Number:	24317
Material(s) Tested:	(3) Heat Fusion Weld Seam(s) (1) Single Extrusion Weld Seam(s)
Test(s) Requested:	SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

Codes:	
AD	Adhesion Failure (100% Peel)
BRK	Break in sheeting away from Seam edge.
SE	Break in sheeting at edge of seam.
AD-BRK	Break in sheeting after some adhesion failure - partial peel.
SIP	Separation in the plane of the sheet (leaving the bond intact).
FTB	Film tearing bond (all non "AD" failures).
NON-FTB	100% peel.

If you have any questions or require any additional information, please call us at 1-800-880-8378.
Sincerely,

James Burgess

Geosynthetic Services Division
<http://www.geosyntheticstestinc.com>

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Chenango Contracting

Project: National Grid

Material: 40 mil. LLDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 24317

TEST REPLICATE NUMBER

Table with 7 columns: PARAMETER, 1, 2, 3, 4, 5, MEAN. Rows include Sample ID: DS-1 | Weld: Heat Fusion, Side: A (Peel Strength 88, Peel Incursion <5, etc.), Side: B (Peel Strength 94, Peel Incursion <5, etc.), and Shear (Shear Strength 102, Shear Elongation >50).

Table with 7 columns: PARAMETER, 1, 2, 3, 4, 5, MEAN. Rows include Sample ID: DS-2 | Weld: Heat Fusion, Side: A (Peel Strength 89, Peel Incursion <5, etc.), Side: B (Peel Strength 91, Peel Incursion <5, etc.), and Shear (Shear Strength 95, Shear Elongation >50).

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS

TRI Client: Chenango Contracting

Project: National Grid

Material: 40 mil. LLDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 24317

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: DS-3 Weld: Heat Fusion						
Side: A						Peel A
Peel Strength (ppi)	86	87	86	91	89	88
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Side: B						Peel B
Peel Strength (ppi)	92	90	107	92	89	94
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	103	103	103	103	103	103
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



DESTRUCTIVE SEAM QUALITY ASSURANCE TEST RESULTS - SINGLE TRACK

TRI Client: Chenango Contracting

Project: National Grid

Material: 40 mil. LLDPE

SAME DAY Peel and Shear (ASTM D 6392/GRI GM19/D 4437/NSF 54/882 mod.)

TRI Log#: 24317

PARAMETER	TEST REPLICATE NUMBER					MEAN
	1	2	3	4	5	
Sample ID: EXDS-1 Weld: Single Extrusion						
Side: Peel						Peel
Peel Strength (ppi)	66	93	67	60	73	72
Peel Incursion (%)	<5	<5	<5	<5	<5	
Peel Locus Of Failure Code	SE	SE	SE	SE	SE	
Peel NSF Failure Code	FTB	FTB	FTB	FTB	FTB	
Shear						Shear
Shear Strength (ppi)	104	105	103	104	103	104
Shear Elongation @ Break (%)	>50	>50	>50	>50	>50	

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



APPENDIX J

GROUNDWATER DISPOSAL BOLS



Drum Number	54911815	Scanned	FC & Pump
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Fleet # 2129
Front Middle Back

Clean Harbors Environmental Services, Inc.
37 Rumery Road
South Portland, ME 04106
(207) 772-2201
MED980672182

Manifest #	BOL 857626	Profile #	T26781R1RA	CH Sales Order#	1603674858	Date	11-9-16
Generator Site	Narragansett Walham MA		Generator EPA ID Number	<input checked="" type="checkbox"/>	Waste Codes	CWT Category Metals Oils <u>Organics</u>	
Transporter & EPA ID Number	Clean Harbors Environmental Services, Inc. MAD039322250		Driver	Fuller	Sampler	Final Code A31 A32 <u>B26</u> CNOS	
Sample Physical Description:	cloudy water, slight odor						

Sample Phase Breakdown

Sample	Oil%	Water%	Sediment%	Rag%
Centrifuge BS&W	 	>99	<1	

Estimated Truck Heal

Sampling	Offloading	Post Rinse
0 inches	gals	gals

Offloading Activity

Total Gallons	Oil	Tank#	Aqueous	Tank#	Solids	Activity	Operator
7562	—	✓	7562	10	—	Steam <u>Offload</u> Rinse	BL

Sample Analysis

Analysis Parameter	Oil Phase		Aqueous Phase		Units	Method	Analyst
	Result	Acceptance Limit	Result	Acceptance Limit			
Total Halogens	 	< 1000	 	 	ppm	EPA SW-846-9077	BL
Flash Point	 	>100°	2140	>140°	°F	ASTM D-3278	
PCB's	 	<2.0	ND	<0.003	ppm	EPA PCB Report 600/4-81-045	
Cyanide Screen	 	 	(-)	**	Pos / Neg	Cyantesmo Paper	↓
Ammonia Screen	 	 	(-)	**	Pos/Neg/ppm	Test Paper or Quantofix	
pH Screen	 	 	6	2.0 - 12.5	Std Units	pH Paper/EPA 150.1	
Sulfide Screen	 	 	(-)	**	Pos / Neg	Lead Acetate Paper	
Total Sulfides	 	 	 	500	ppm	Hach Method 8131	
H2S Gas	 	 	 	100	ppm	CHESI SOP-61RU-601	
Metals Analysis	Yes <u>(No)</u>	See Attached	 			EPA 200.7	

Notes: *This load is recommended for acceptance.*
Offloading, Treatment, H&S Issues:

Initials BL

**Acceptance based upon Treatability and Health & Safety.

Billing Comments

Minimum Charge:		Tank Wash:	\$130.00	GM Init
Steam:			\$	
Heal Charge:			\$	
Base Disposal Price:	<u>7562</u> Gals	X \$ 1.60 /gal =	\$	NA
Suspended Solids Surcharge:		X \$ <u>60</u> /gal =	\$ <u>4537²⁰</u>	
		X \$ /gal =	\$	
			\$ <u>4667²⁰</u>	

Analysis results are for Clean Harbors Env. Services, Inc. Internal use only.

Site Address: 642 Allens Avenue
Providence, RI 02905

SC PPW 10/19/2016
WORK ORDER NO. RI-1603674858-001

DOCUMENT NO. 857626

STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean Harbors Environmental Service, Inc. VEHICLE ID # 1840/2129
 EPA ID # MAD039322250 TRANS. 1 PHONE (781) 792-5000
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY Clean Harbors Environmental Service, Inc.			SHIPPER ATTN: Susan Brochu Narragansett Electric Company			
FACILITY EPA ID # MED980672182			SHIPPER EPA ID # RI D007918774			
ADDRESS 37 Rumery Road			ADDRESS 40 Sylvan Road			
CITY South Portland		STATE ME	ZIP 04106	CITY Waltham		
				STATE MA		
				ZIP 02451		
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS		TOTAL QUANTITY	UNIT WT/VOL
001 1000	TT		A. NON DOT REGULATED MATERIAL, (PURGEWATER)		67562	6
			B.			
			C.			
			D.			
			E.			
			F.			
			G.			
			H.			
SPECIAL HANDLING INSTRUCTIONS A.T26781RIRB-RU			EMERGENCY PHONE #: (600) 463-3718		GENERATOR: Narragansett Electric Company	

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	PRINT #1215 AGENT FOR DAVID WOLF NARRAGANSETT ELECT	SIGN [Signature]	DATE 11-09-16
TRANSPORTER 1	PRINT DALE R FULLER	SIGN [Signature]	DATE 11-09-16
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	PRINT [Signature]	SIGN [Signature]	DATE 11-9-16

1



Fleet # 2129
Front Middle Back

Clean Harbors Environmental Services, Inc.
37 Rumery Road
South Portland, ME 04106
(207) 772-2201
MED980672182

Manifest # <u>BOC 857627</u>	Profile # <u>T26781RFB</u>	CH Sales Order# <u>RU 1663674858</u>	Date <u>11-11-16</u>
Generator Site <u>Mt Pleasant Providence RI</u>	Generator EPA ID Number <input checked="" type="checkbox"/>	Waste Codes <u>0</u>	CWT Category Metals Oils <u>Organics</u>
Transporter & EPA ID Number <u>Clean Harbors Environmental Services, Inc. MAD039322250</u>	Driver <u>Fuller</u>	Final Code A31 A32 <u>B26</u> CNOS	
Sample Physical Description: <u>slightly cloudy water</u>			

Sample Phase Breakdown

Sample	Oil%	Water%	Sediment%	Rag%
Centrifuge BS&W	X	<u>>99</u>	<u><1</u>	X

Estimated Truck Heal

Sampling	Offloading	Post Rinse
Inches	gals	gals

Offloading Activity

Total Gallons	Oil	Tank#	Aqueous	Tank#	Solids	Activity	Operator
<u>6754</u>			<u>6754</u>	<u>7</u>	<u>-</u>	Steam Offload Rinse	<u>EPB</u>

Sample Analysis

Analysis Parameter	Oil Phase		Aqueous Phase		Units	Method	Analyst
	Result	Acceptance Limit	Result	Acceptance Limit			
Total Halogens	X	< 1000			ppm	EPA SW-846-9077	<u>BL</u>
Flash Point	X	>100°	<u>>140</u>	>140°	°F	ASTM D-3278	
PCB's	X	< 2.0	<u>N/A</u>	<0.003	ppm	EPA PCB Report 600/4-81-045	
Cyanide Screen			<u>(-)</u>	**	Pos / Neg	Cyantesmo Paper	
Ammonia Screen			<u>(-)</u>	**	Pos/Neg/ppm	Test Paper or Quantofix	
pH Screen			<u>6.5</u>	2.0 - 12.5	Std Units	pH Paper/EPA 150.1	
Sulfide Screen			<u>(-)</u>	**	Pos / Neg	Lead Acetate Paper	
Total Sulfides			X	500	ppm	Hach Method 8131	
H2S Gas			X	100	ppm	CHESI SOP-61RU-601	
Metals Analysis	Yes/ <u>(No)</u>	See Attached				EPA 200.7	

Notes: *This load is recommended for acceptance.* Initials BL
Offloading, Treatment, H&S Issues:
**Acceptance based upon Treatability and Health & Safety.

Billing Comments

Billing Comments		GM Init
Minimum Charge:	Tank Wash:	<u>\$130.00</u>
Steam:		\$
Heal Charge:		\$
Base Disposal Price:	<u>6754</u> Gals X \$ <u>1.60</u> /gal =	\$ <u>10808</u>
Suspended Solids Surcharge:	<u>6754</u> Gals X \$ <u>.20</u> /gal =	\$ <u>1350.80</u>
		\$
		\$ <u>1980.80</u>

Site Address: 642 Allens Avenue
Providence, RI 02905

SC PPW 10/19/2016
WORK ORDER NO. RI1603674858-001

DOCUMENT NO. 857627

STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean Harbors Environmental Service, Inc. VEHICLE ID # 1840/2129
 EPA ID # MAD039322250 TRANS. 1 PHONE (781) 792-5000
 TRANSPORTER 2 _____ VEHICLE ID # _____
 EPA ID # _____ TRANS. 2 PHONE _____

DESIGNATED FACILITY <u>Clean Harbors Environmental Service, Inc.</u>			SHIPPER <u>ATTN: Susan Brochu Narragansett Electric Company</u>		
FACILITY EPA ID # <u>MED980672182</u>			SHIPPER EPA ID # <u>RI0007918774</u>		
ADDRESS <u>37 Rumery Road</u>			ADDRESS <u>40 Sylvan Road</u>		
CITY <u>South Portland</u>		STATE <u>ME</u>	ZIP <u>04106</u>	CITY <u>Waltham</u>	
				STATE <u>MA</u>	
				ZIP <u>02451</u>	
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
<u>001</u> <u>10000</u>	<u>TT</u>		A. <u>NON DOT REGULATED MATERIAL, (PURGEWATER)</u>	<u>06754</u>	<u>G</u>
			B.		
			C.		
			D.		
			E.		
			F.		
			G.		
			H.		
SPECIAL HANDLING INSTRUCTIONS <u>A.T26781RIRB-RU</u>			EMERGENCY PHONE #: <u>(800) 463-3716</u>		GENERATOR: <u>Narragansett Electric Company</u>

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

SHIPPER	<u>JIM DEWOLF</u> PRINT #1215 AGENT FOR NARRAGANSETT ELECT.	SIGN <u>JIM DEWOLF</u> #1215 AGENT FOR TNEC	DATE <u>11-11-16</u>
TRANSPORTER 1	<u>DALE R FULLER</u> PRINT	SIGN <u>Dale R Fuller</u>	DATE <u>11-11-16</u>
TRANSPORTER 2	PRINT	SIGN	DATE
RECEIVED BY	<u>E. BLANCHARD</u> PRINT	SIGN <u>[Signature]</u>	DATE <u>11/14/16</u>

TRUCK # 4121

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number RID007918774	2. Page 1 of 1	3. Emergency Response Phone (900) 483-3718	4. Manifest Tracking Number 009519020 FLE
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5. Generator's Name and Mailing Address Narragansett Electric Company 40 Sylvan Road Waltham, MA 02451		Generator's Site Address (if different than mailing address) 642 Allens Avenue Providence, RI 02905	
Generator's Phone: (781) 907-3647		ATTN: Susan Brochu	

6. Transporter 1 Company Name Clean Harbors Environmental Service, Inc.	U.S. EPA ID Number MAD039322250
7. Transporter 2 Company Name	U.S. EPA ID Number

8. Designated Facility Name and Site Address Clean Harbors of Braintree Inc 1 Hill Avenue Braintree, MA 02184	U.S. EPA ID Number MAD053452637
Facility's Phone: (781) 386-7100	

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
1.	NON DOT REGULATED MATERIAL, (SOIL CUTTINGS)	001	TT	1	Y	MA01	MA99	R015
2.								
3.								
4.								

14. Special Handling Instructions and Additional Information 1. U57441RIRB
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15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offoror's Printed/Typed Name JIM DENOLF NARRAGANSETT ELECTRIC	Signature <i>[Signature]</i>	Month 11	Day 11	Year 16
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16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.	Port of entry/exit: Date leaving U.S.:
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17. Transporter Acknowledgment of Receipt of Materials				
Transporter 1 Printed/Typed Name Greg Lunn	Signature <i>[Signature]</i>	Month 11	Day 11	Year 16
Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

18. Discrepancy				
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection	Manifest Reference Number:			

18b. Alternate Facility (or Generator)	U.S. EPA ID Number
Facility's Phone:	
18c. Signature of Alternate Facility (or Generator)	Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)			
1. H141	2.	3.	4.

20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a				
Printed/Typed Name Huyen Hoang	Signature <i>[Signature]</i>	Month 11	Day 11	Year 16



APPENDIX K

PERIMETER AIR MONITORING RESULTS

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instantaneous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
8/4/2016	12:50	Northern Limit of Work	0.031	NR	0.0
8/4/2016	13:00	Western Limits of Work	0.017	NR	0.0
8/4/2016	13:18	Eastern Limits of Work	0.028	NR	0.0
8/4/2016	14:35	Southern Limits of Work	0.011	NR	0.0
8/5/2016	7:42	Main Entrance	0.019	0.003	0.0
8/5/2016	8:58	Main Entrance	0.023	0.005	0.0
8/5/2016	10:10	SW Corner of Site	0.009	0.004	0.0
8/5/2016	11:26	NW Corner of Site	0.016	0.005	0.0
8/5/2016	13:07	NW Corner of Site	0.026	0.007	0.0
8/5/2016	13:52	Western Limits of Work	0.032	0.011	0.0
8/5/2016	14:49	Western Limits of Work	0.021	0.011	0.0
8/8/2016	7:11	Main Entrance	0.012	0.002	0.0
8/8/2016	8:50	NW Corner of Site	0.004	0.002	0.0
8/8/2016	10:01	SW Corner of Site	0.007	0.003	0.0
8/8/2016	11:38	Main Entrance	0.018	0.004	0.0
8/8/2016	14:05	NE Corner of Scale House	0.020	0.006	0.0
8/8/2016	14:38	NE Corner of Scale House	0.032	0.008	0.0
8/8/2016	15:00	NE Corner of Scale House	0.022	0.007	0.0
8/9/2016	7:50	Main Entrance	0.010	0.001	0.0
8/9/2016	9:05	NE Corner of Site	0.019	0.004	0.0
8/9/2016	10:11	South of bldg. No. 2	0.027	0.007	0.0
8/9/2016	11:00	South of bldg. No. 2	0.031	0.007	0.0
8/9/2016	12:48	South of bldg. No. 2	0.038	0.009	0.0
8/9/2016	13:57	NE Corner of Site	0.015	0.008	0.0
8/9/2016	14:40	SE Corner of Site	0.005	0.008	0.0
8/10/2016	7:44	NE Corner of Site	0.009	0.003	0.0
8/10/2016	9:15	South of bldg. No. 2	0.016	0.007	0.0
8/10/2016	10:27	South of bldg. No. 2	0.02	0.007	0.0
8/10/2016		Stopped due to steady rain			
8/11/2016	7:52	NE Corner of Site	0.032	0.007	0.0
8/11/2016	8:23	NE Corner of Site	0.017	0.007	0.0
8/11/2016	8:32	NE Corner of Scale House	0.024	0.009	0.0
8/11/2016	9:22	NE Corner of Scale House	0.011	0.011	0.0
8/11/2016	11:44	Western Limits of Work	0.022	0.011	0.0
8/11/2016	13:28	Western Limits of Work	0.016	0.009	0.0
8/11/2016	14:20	Northern Limits of Work	0.009	0.008	0.0
8/12/2016	8:00	Main Entrance	0.004	0.001	0.0
8/12/2016	10:10	Western Limits of Work	0.036	0.009	0.0
8/12/2016	10:48	Western Limits of Work	0.029	0.012	0.0
8/12/2016	11:50	Northern Limits of Work	0.011	0.011	0.0
8/12/2016	13:30	Northern Limits of Work	0.017	0.013	0.0
8/12/2016	14:20	Main Entrance	0.048	0.016	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instantaneous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
8/15/2016	8:11	Main Entrance	0.041	0.006	0.0
8/15/2016	9:32	Western Limits of Work	0.021	0.008	0.0
8/15/2016	10:41	Western Limits of Work	0.032	0.011	0.0
8/15/2016	11:38	NW Corner Meter Room	0.024	0.011	0.0
8/15/2016	12:42	NW Corner Meter Room	0.042	0.014	0.0
8/15/2016	13:17	NW Corner Meter Room	0.019	0.015	0.0
8/15/2016	14:08	Main Entrance	0.027	0.014	0.0
8/15/2016	15:00	Main Entrance	0.011	0.017	0.0
8/16/2016	7:38	Western Limits of Work	0.022	0.007	0.0
8/16/2016	9:28	Western Limits of Work	0.017	0.006	0.0
8/16/2016	10:08	Main Entrance	0.032	0.008	0.0
8/16/2016	11:12	South of Holder 18	0.025	0.010	0.0
8/16/2016	13:13	Western Limits of Work	0.019	0.009	0.0
8/16/2016	14:06	Western Limits of Work	0.029	0.010	0.0
8/17/2016	7:19	South of Holder 21	0.020	0.004	0.0
8/17/2016	8:00	South of Holder 21	0.017	0.003	0.0
8/17/2016	8:56	South of Holder 21	0.030	0.005	0.0
8/17/2016	10:00	NW Corner Meter Room	0.071	0.010	0.0
8/17/2016	11:42	NW Corner Meter Room	0.052	0.018	0.0
8/17/2016	13:20	NW Corner Meter Room	0.040	0.016	0.0
8/17/2016	14:55	SE Corner Meter Room	0.016	0.015	0.0
8/18/2016	7:41	South of Holder 21	0.022	0.006	0.0
8/18/2016	9:15	South of Holder 21	0.018	0.011	0.0
8/18/2016	10:30	South of Holder 18	0.033	0.013	0.0
8/18/2016	12:00	South of Holder 18	0.029	0.016	0.0
8/18/2016	13:18	SW Corner of Site	0.015	0.016	0.0
8/18/2016	14:00	SW Corner of Site	0.021	0.018	0.0
8/18/2016	14:56	NW Corner of Site	0.009	0.017	0.0
8/19/2016	8:01	NW Corner of Booster House	0.018	0.002	0.0
8/19/2016	8:50	NW Corner of Booster House	0.024	0.003	0.0
8/19/2016	9:45	NW Corner of Site	0.038	0.006	0.0
8/19/2016	11:00	SW Corner of Site	0.016	0.008	0.0
8/19/2016	13:42	Main Entrance	0.037	0.010	0.0
8/19/2016	15:00	South of Holder 21	0.020	0.012	0.0
8/22/2016	7:20	NW Fence Meter Room	0.038	0.004	0.0
8/22/2016	8:11	NW Fence Meter Room	0.023	0.005	0.0
8/22/2016	9:38	Main Entrance	0.016	0.007	0.0
8/22/2016	10:10	Southern Limits of Work	0.028	0.007	0.0
8/22/2016	11:09	Western Limits of Work	0.048	0.010	0.0
8/22/2016	11:50	SW Corner of Site	0.021	0.011	0.0
8/22/2016	13:06	NW Corner of Scale House	0.019	0.012	0.0
8/22/2016	14:12	NW Corner of Scale House	0.034	0.014	0.0
8/22/2016	15:11	NW Corner of Site	0.067	0.015	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instantaneous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
8/23/2016	7:15	Northern Limits of Work	0.033	0.006	0.0
8/23/2016	7:40	Northern Limits of Work	0.026	0.003	0.0
8/23/2016	8:52	South of Holder 21	0.019	0.005	0.0
8/23/2016	10:06	North Fence Booster House	0.052	0.010	0.0
8/23/2016	11:14	North Fence Booster House	0.041	0.012	0.0
8/23/2016	13:00	North Fence Booster House	0.019	0.012	0.0
8/23/2016	14:04	NW Corner of Meter Room	0.014	0.013	0.0
8/23/2016	15:10	Main Entrance	0.022	0.015	0.0
8/24/2016	7:10	SE Corner of Bldg. No.2	0.020	0.002	0.0
8/24/2016	8:02	Northern Limits of Work	0.062	0.012	0.0
8/24/2016	10:00	Northern Limits of Work	0.058	0.014	0.0
8/24/2016	10:56	Northern Limits of Work	0.031	0.015	0.0
8/24/2016	11:32	Southern Limits of Work	0.029	0.014	0.0
8/24/2016	13:00	Northern Limits of Work	0.043	0.016	0.0
8/24/2016	13:51	Northern Limits of Work	0.047	0.019	0.0
8/24/2016	14:20	South of pad demo	0.024	0.019	0.0
8/24/2016	15:08	South of pad demo	0.030	0.020	0.0
8/25/2016	7:48	Western Limits of Work	0.031	0.002	0.0
8/25/2016	8:39	Western Limits of Work	0.017	0.004	0.0
8/25/2016	9:50	Northern Limits of Work	0.026	0.005	0.0
8/25/2016	11:12	Northern Limits of Work	0.011	0.006	0.0
8/25/2016	11:48	Northern Limits of Work	0.038	0.008	0.0
8/25/2016	12:50	Northern Limits of Work	0.078	0.015	0.0
8/25/2016	13:30	Northern Limits of Work	0.040	0.017	0.0
8/25/2016	14:38	Northern Limits of Work	0.017	0.020	0.0
8/29/2016	7:15	Western Limits of Work	0.012	0.001	0.0
8/29/2016	8:32	Western Limits of Work	0.010	0.003	0.0
8/29/2016	9:48	Main Entrance	0.028	0.007	0.0
8/29/2016	10:37	Main Entrance	0.016	0.004	0.0
8/29/2016	11:50	Main Entrance	0.043	0.009	0.0
8/29/2016	13:12	South of Hot Box	0.036	0.012	0.0
8/29/2016	14:28	South of Hot Box	0.029	0.012	0.0
8/29/2016	15:06	South of Hot Box	0.011	0.014	0.0
8/29/2016	15:20	South of Hot Box	0.030	0.013	0.0
8/30/2016	7:46	West of Scale House	0.017	0.003	0.0
8/30/2016	8:10	West of Scale House	0.011	0.003	0.0
8/30/2016	8:29	West of Scale House	0.024	0.006	0.0
8/30/2016	8:40	Eastern LNG Fence	0.013	0.006	0.0
8/30/2016	9:52	Eastern LNG Fence	0.029	0.009	0.0
8/30/2016	10:17	Eastern LNG Fence	0.020	0.008	0.0
8/30/2016	11:10	Eastern LNG Fence	0.025	0.011	0.0
8/30/2016	13:05	Western Limits of Work	0.048	0.013	0.0
8/30/2016	14:00	Western Limits of Work	0.037	0.015	0.0
8/30/2016	14:40	Western Limits of Work	0.008	0.015	0.0
8/30/2016	15:10	South of Hot Box	0.019	0.017	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instantaneous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
8/31/2016	7:50	South of bldg. No. 2	0.028	0:01	0.0
8/31/2016	8:33	South of bldg. No. 2	0.033	0.003	0.0
8/31/2016	9:21	SW Corner of bldg. No. 2	0.017	0.006	0.0
8/31/2016	10:34	SW Corner of bldg. No. 2	0.024	0.008	0.0
8/31/2016	11:16	SW Corner of bldg. No. 2	0.011	0.009	0.0
8/31/2016	11:57	Main Entrance	0.047	0.011	0.0
8/31/2016	13:00	Main Entrance	0.009	0.011	0.0
8/31/2016	13:42	Western Limits of Work	0.030	0.013	0.0
8/31/2016	14:12	SW Corner of Site	0.029	0.015	0.0
8/31/2016	14:45	SW Corner of Site	0.016	0.013	0.0
9/1/2016	7:44	Main Entrance	0.041	0.009	0.0
9/1/2016	8:32	Main Entrance	0.033	0.010	0.0
9/1/2016	9:32	NW Corner of Site	0.017	0.008	0.0
9/1/2016	Stopped due to steady rain				
9/2/2016	7:31	NW Corner of Meter Room	0.038	0:08	0.0
9/2/2016	8:20	NW Corner of Meter Room	0.026	0.008	0.0
9/2/2016	9:45	NW Corner of the Site	0.030	0.012	0.0
9/2/2016	11:17	Main Entrance	0.017	0.011	0.0
9/2/2016	12:32	Main Entrance	0.041	0.014	0.0
9/6/2016	8:50	Main Entrance	0.011	0:05	0.0
9/6/2016	9:41	NW Corner of Meter Room	0.018	0.005	0.0
9/6/2016	11:15	SW Corner of Site	0.013	0.005	0.0
9/6/2016	13:07	SW Corner of Site	0.022	0.008	0.0
9/6/2016	14:32	Gate behind Meter Room	0.019	0.007	0.0
9/7/2016	7:45	Main Entrance	0.019	0.007	0.0
9/7/2016	8:55	Main Entrance	0.023	0.011	0.0
9/7/2016	10:00	NW Corner of Site	0.016	0.011	0.0
9/7/2016	11:00	NW Corner of Site	0.041	0.010	0.0
9/7/2016	11:45	NW Corner of Site	0.055	0.017	0.0
9/7/2016	13:00	NW Corner of Site	0.030	0.022	0.0
9/7/2016	14:30	SW Corner of Site	0.025	0.019	0.0
9/8/2016	7:25	Main Entrance	0.018	0.006	0.0
9/8/2016	8:15	Main Entrance	0.020	0.006	0.0
9/8/2016	9:45	Main Entrance	0.033	0.011	0.0
9/8/2016	10:30	NW Corner of Meter Room	0.051	0.012	0.0
9/8/2016	12:00	NW Corner of Meter Room	0.022	0.019	0.0
9/8/2016	13:10	NW Corner of Meter Room	0.030	0.022	0.0
9/8/2016	14:22	NW Corner of Meter Room	0.069	0.026	0.0
9/8/2016	15:18	NW Corner of Meter Room	0.035	0.024	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
9/9/2016	8:00	NW Corner of Meter Room	0.021	0.004	0.0
9/9/2016	9:40	SW Corner of bldg. No. 2	0.018	0.006	0.0
9/9/2016	10:08	SW Corner of bldg. No. 2	0.023	0.007	0.0
9/9/2016	10:58	SW Corner of bldg. No. 2	0.016	0.007	0.0
9/9/2016	11:50	SW Corner of bldg. No. 2	0.028	0.008	0.0
9/9/2016	13:08	SW Corner of the Site	0.020	0.010	0.0
9/9/2016	14:01	SW Corner of the Site	0.032	0.012	0.0
9/9/2016	15:00	SW Corner of the Site	0.013	0.011	0.0
9/9/2016	15:28	SW Corner of the Site	0.019	0.012	0.0
9/12/2016	7:53	SW Corner of Site	0.029	0.002	0.0
9/12/2016	8:30	SW Corner of Site	0.019	0.003	0.0
9/12/2016	9:30	Main Entrance	0.051	0.007	0.0
9/12/2016	10:15	Main Entrance	0.043	0.007	0.0
9/12/2016	11:45	Main Entrance	0.037	0.010	0.0
9/12/2016	12:35	Main Entrance	0.048	0.013	0.0
9/12/2016	13:05	South of Holder 18	0.026	0.017	0.0
9/12/2016	14:00	South of Holder 18	0.019	0.015	0.0
9/12/2016	14:55	South of Holder 18	0.010	0.015	0.0
9/13/2016	7:05	Main Entrance	0.009	0.000	0.0
9/13/2016	8:15	Main Entrance	0.018	0.003	0.0
9/13/2016	9:44	NW Corner of Bldg. No. 2	0.022	0.005	0.0
9/13/2016	10:50	NW Corner of Bldg. No. 2	0.019	0.005	0.0
9/13/2016	11:39	NW Corner of Bldg. No. 2	0.033	0.010	0.0
9/13/2016	13:30	NW Corner of Site	0.044	0.012	0.0
9/13/2016	14:20	NW Corner of Site	0.039	0.016	0.0
9/13/2016	15:11	NW Corner of Site	0.030	0.016	0.0
9/14/2016	8:17	Main Entrance	0.018	0.006	0.0
9/14/2016	9:22	SW Corner of Site	0.008	0.009	0.0
9/14/2016	10:42	SW Corner of Site	0.016	0.008	0.0
9/14/2016	11:50	Northern Limits of Work	0.026	0.011	0.0
9/14/2016	13:00	Northern Limits of Work	0.039	0.012	0.0
9/14/2016	14:08	Northern Limits of Work	0.082	0.019	0.0
9/14/2016	15:03	Northern Limits of Work	0.050	0.021	0.0
9/15/2016	7:43	NW Corner of Site	0.012	0.003	0.0
9/15/2016	8:38	NW Corner of Site	0.019	0.005	0.0
9/15/2016	9:55	Main Entrance	0.023	0.008	0.0
9/15/2016	11:00	Main Entrance	0.044	0.012	0.0
9/15/2016	11:49	Main Entrance	0.026	0.015	0.0
9/15/2016	13:12	SW Corner of Meter Room	0.038	0.017	0.0
9/15/2016	14:10	Southern Limits of Work	0.047	0.021	0.0
9/15/2016	15:14	Western Limits of Work	0.020	0.019	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
9/16/2016	7:38	Main Entrance	0.009	0.002	0.0
9/16/2016	8:18	Main Entrance	0.025	0.006	0.0
9/16/2016	9:51	SW Corner of Site	0.008	0.005	0.0
9/16/2016	10:59	SW Corner of Site	0.012	0.005	0.0
9/16/2016	11:36	SW Corner of Site	0.019	0.009	0.0
9/16/2016	12:56	Northern Limits of Work	0.033	0.011	0.0
9/16/2016	14:09	Western Limits of Work	0.018	0.011	0.0
9/16/2016	15:00	Western Limits of Work	0.014	0.011	0.0
9/19/2016	7:38	SW Corner of bldg. No. 2	0.017	0.003	0.0
9/19/2016	8:47	SW Corner of bldg. No. 2	0.022	0.003	0.0
9/19/2016	Stopped due to steady rain				
9/20/2016	8:11	SW Corner of bldg. No. 2	0.014	0.004	0.0
9/20/2016	9:36	SW Corner of bldg. No. 2	0.011	0.004	0.0
9/20/2016	10:45	SW Corner of bldg. No. 2	0.020	0.006	0.0
9/20/2016	11:50	Main Entrance	0.023	0.006	0.0
9/20/2016	13:12	Main Entrance	0.017	0.006	0.0
9/20/2016	13:40	Main Entrance	0.032	0.011	0.0
9/20/2016	14:38	SW Corner of Site	0.015	0.012	0.0
9/20/2016	16:00	SW Corner of Site	0.028	0.011	0.0
9/20/2016	17:00	NW Corner of Site	0.036	0.013	0.0
9/21/2016	7:52	NW Corner of Site	0.016	0.002	0.0
9/21/2016	8:41	SW Corner of Site	0.028	0.004	0.0
9/21/2016	9:38	SW Corner of Site	0.022	0.007	0.0
9/21/2016	11:00	SW Corner of Site	0.036	0.010	0.0
9/21/2016	11:49	Main Entrance	0.020	0.011	0.0
9/21/2016	13:25	Main Entrance	0.044	0.016	0.0
9/21/2016	15:00	Main Entrance	0.032	0.015	0.0
9/21/2016	16:24	Main Entrance	0.051	0.018	0.0
9/21/2016	17:00	Main Entrance	0.012	0.018	0.0
9/22/2016	7:38	Main Entrance	0.017	0.002	0.0
9/22/2016	8:50	Main Entrance	0.021	0.004	0.0
9/22/2016	9:41	SW Corner of Site	0.038	0.011	0.0
9/22/2016	10:53	Main Entrance	0.051	0.013	0.0
9/22/2016	11:36	Main Entrance	0.020	0.02	0.0
9/22/2016	12:53	Main Entrance	0.021	0.021	0.0
9/22/2016	13:29	Main Entrance	0.022	0.022	0.0
9/22/2016	14:23	Main Entrance	0.039	0.026	0.0
9/22/2016	15:33	Main Entrance	0.007	0.025	0.0
9/22/2016	16:00	Main Entrance	0.009	0.028	0.0
9/22/2016	16:37	Main Entrance	0.005	0.026	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
9/23/2016	7:31	Main Entrance	0.030	0.006	0.0
9/23/2016	8:38	Main Entrance	0.042	0.008	0.0
9/23/2016	11:20	NW Corner of bldg. No. 2	0.026	0.014	0.0
9/23/2016	12:46	NW Corner of bldg. No. 2	0.037	0.018	0.0
9/23/2016	13:50	North of Scale House	0.029	0.018	0.0
9/23/2016	14:18	North of Scale House	0.020	0.017	0.0
9/23/2016	15:00	North of Scale House	0.053	0.019	0.0
9/24/2016	7:15	Main Entrance	0.024	0.006	0.0
9/24/2016	8:00	Main Entrance	0.026	0.009	0.0
9/24/2016	8:55	Main Entrance	0.031	0.012	0.0
9/24/2016	9:35	Main Entrance	0.042	0.018	0.0
9/24/2016	10:30	Main Entrance	0.027	0.019	0.0
9/24/2016	11:20	Main Entrance	0.026	0.019	0.0
9/24/2016	13:00	Main Entrance	0.024	0.020	0.0
9/24/2016	14:35	Main Entrance	0.029	0.020	0.0
9/26/2016	7:50	Northern Fence Scale House	0.042	0.004	0.0
9/26/2016	8:42	Northern Fence Scale House	0.031	0.006	0.0
9/26/2016	10:11	Main Entrance	0.016	0.006	0.0
9/26/2016	11:39	Main Entrance	0.028	0.013	0.0
9/26/2016	12:43	Main Entrance	0.021	0.014	0.0
9/26/2016	14:31	SW Corner of Site	0.052	0.019	0.0
9/26/2016	15:53	SW Corner of Site	0.038	0.018	0.0
9/26/2016	16:49	SW Corner of Site	0.011	0.018	0.0
9/28/2016	7:41	NW Corner of Site	0.014	0.003	0.0
9/28/2016	8:50	SW Corner of Site	0.019	0.005	0.0
9/28/2016	9:14	Main Entrance	0.030	0.008	0.0
9/28/2016	10:13	Eastern Fence	0.020	0.010	0.0
9/28/2016	11:38	NE Corner	0.021	0.010	0.0
9/28/2016	13:00	NE Corner	0.043	0.012	0.0
9/28/2016	14:17	NE Corner	0.032	0.014	0.0
9/28/2016	15:18	NW Corner of Bldg. #2	0.011	0.013	0.0
9/28/2016	16:41	NW Corner of Bldg. #2	0.025	0.016	0.0
9/29/2016	7:42	NW Corner of Site	0.022	0.004	0.0
9/29/2016	8:38	NW Corner of Site	0.017	0.008	0.0
9/29/2016	10:00	NW Corner of Site	0.028	0.010	0.0
9/29/2016	11:53	SW Corner of Site	0.032	0.010	0.0
9/29/2016	12:31	SW Corner of Site	0.019	0.012	0.0
9/29/2016	13:48	Main Entrance	0.011	0.014	0.0
9/29/2016	15:02	Western Fence	0.024	0.014	0.0
9/29/2016	15:49	Main Entrance	0.041	0.018	0.0
9/29/2016	16:30	NW Corner of Site	0.034	0.017	0.0
9/29/2016	16:45	SE Corner of Site	0.022	0.018	0.0
9/30/2016	7:51	NW Corner of Site	0.016	0.003	0.0
9/30/2016	8:43	NW Corner of Site	0.021	0.007	0.0
9/30/2016		Stopped due to steady rain			

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instantaneous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
10/3/2016	7:53	SW Corner of Site	0.009	0.001	0.0
10/3/2016	8:55	SW Corner of Site	0.014	0.004	0.0
10/3/2016	9:47	SW Corner of Site	0.018	0.006	0.0
10/3/2016	11:00	NW Corner of Site	0.022	0.006	0.0
10/3/2016	11:49	NW Corner of Site	0.019	0.009	0.0
10/3/2016	12:56	Main Entrance	0.030	0.011	0.0
10/3/2016	13:40	Main Entrance	0.024	0.011	0.0
10/3/2016	15:51	Northern Fence	0.042	0.014	0.0
10/3/2016	16:50	NW Corner of Site	0.033	0.017	0.0
10/4/2016	7:32	NE Corner of Site	0.017	0.004	0.0
10/4/2016	8:45	NE Corner of Site	0.024	0.006	0.0
10/4/2016	9:53	Main Entrance	0.020	0.006	0.0
10/4/2016	11:02	Main Entrance	0.032	0.008	0.0
10/4/2016	13:00	NW Corner of Site	0.017	0.010	0.0
10/4/2016	14:05	NW Corner of Site	0.021	0.010	0.0
10/4/2016	15:00	NW Corner of Site	0.029	0.012	0.0
10/4/2016	15:42	Main Entrance	0.040	0.017	0.0
10/4/2016	16:30	Main Entrance	0.031	0.019	0.0
10/5/2016	8:01	SW Corner of Site	0.012	0.004	0.0
10/5/2016	10:00	SW Corner of Site	0.031	0.006	0.0
10/5/2016	10:32	Main Entrance	0.026	0.006	0.0
10/5/2016	11:41	Main Entrance	0.038	0.012	0.0
10/5/2016	13:02	Main Entrance	0.034	0.011	0.0
10/5/2016	14:00	NW Corner of Site	0.016	0.014	0.0
10/5/2016	14:53	Eastern Fence	0.029	0.018	0.0
10/5/2016	15:25	Eastern Fence	0.043	0.020	0.0
10/6/2016	7:49	NW Corner of Site	0.014	0.007	0.0
10/6/2016	8:44	NW Corner of Site	0.016	0.01	0.0
10/6/2016	10:06	Main Entrance	0.033	0.01	0.0
10/6/2016	11:32	Southern Fence	0.052	0.019	0.0
10/6/2016	12:42	Southern Fence	0.041	0.021	0.0
10/6/2016	14:50	Southern Fence	0.030	0.024	0.0
10/6/2016	15:30	SW Corner of Site	0.020	0.024	0.0
10/7/2016	8:03	Southern Fence	0.022	0.009	0.0
10/7/2016	8:50	Southern Fence	0.019	0.011	0.0
10/7/2016	9:47	Northern Fence Scale House	0.033	0.014	0.0
10/7/2016	11:08	Northern Fence Scale House	0.026	0.013	0.0
10/7/2016	12:30	NW Corner of Site	0.023	0.017	0.0
10/7/2016	13:54	Eastern Fence	0.039	0.019	0.0
10/7/2016	15:00	Eastern Fence	0.019	0.021	0.0
10/11/2016	7:54	Gate	0.010	0.000	0.0
10/11/2016	8:50	Gate	0.014	0.004	0.0
10/11/2016	9:20	Gate	0.006	0.008	0.0
10/11/2016	10:37	Gate	0.004	0.004	0.0
10/11/2016	11:27	Gate	0.031	0.008	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
10/12/2016	9:21	NE Gate	0.036	0.003	0.0
10/12/2016	10:36	NE Gate	0.009	0.007	0.0
10/12/2016	11:07	NE Gate	0.004	0.008	0.0
10/12/2016	15:03	NE Gate	0.003	0.017	0.0
10/13/2016	8:00	Electrical Conduit	0.021	0.000	0.0
10/13/2016	9:24	Electrical Conduit	0.026	0.007	0.0
10/13/2016	10:01	Electrical Conduit	0.008	0.010	0.0
10/13/2016	10:57	Electrical Conduit	0.010	0.013	0.0
10/13/2016	11:26	Electrical Conduit	0.012	0.008	0.0
10/14/2016	7:17	Forebay 7	0.006	0.000	0.0
10/14/2016	8:22	Forebay 7	0.011	0.002	0.0
10/14/2016	9:31	Forebay 7	0.003	0.005	0.0
10/14/2016	10:01	Forebay 7	0.004	0.005	0.0
10/14/2016	10:36	Forebay 7	0.004	0.005	0.0
10/14/2016	11:21	Forebay 7	0.003	0.006	0.0
10/14/2016	12:45	Forebay 7	0.003	0.007	0.0
10/14/2016	14:20	Forebay 7	0.002	0.008	0.0
10/14/2016	14:37	Forebay 7	0.004	0.008	0.0
10/17/2016	8:09	Electrical Conduit	0.003	0.000	0.0
10/17/2016	9:45	Electrical Conduit	0.024	0.000	0.0
10/17/2016	10:54	Electrical Conduit	0.021	0.007	0.0
10/17/2016	11:28	Electrical Conduit	0.022	0.009	0.0
10/17/2016	12:39	Electrical Conduit	0.010	0.016	0.0
10/17/2016	13:33	Electrical Conduit	0.016	0.018	0.0
10/17/2016	14:28	Electrical Conduit	0.018	0.020	0.0
10/17/2016	15:18	Electrical Conduit	0.021	0.022	0.0
10/18/2016	7:35	Southern Fence	0.192	0.000	0.0
10/18/2016	8:25	Southern Fence	0.158	0.022	0.0
10/18/2016	9:45	Southern Fence	0.082	0.036	0.0
10/18/2016	10:15	Southern Fence	0.066	0.041	0.0
10/18/2016	11:11	Southern Fence	0.067	0.049	0.0
10/18/2016	11:50	Southern Fence	0.073	0.055	0.0
10/18/2016	13:30	Southern Fence	0.053	0.068	0.0
10/18/2016	14:06	Southern Fence	0.050	0.071	0.0
10/18/2016	15:02	Southern Fence	0.021	0.075	0.0
10/19/2016	7:53	Steel Stairs	0.041	0.002	0.0
10/19/2016	9:38	Steel Stairs	0.039	0.012	0.0
10/19/2016	10:15	Steel Stairs	0.035	0.015	0.0
10/19/2016	10:43	Steel Stairs	0.083	0.017	0.0
10/19/2016	11:29	Steel Stairs	0.044	0.022	0.0
10/19/2016	12:53	Steel Stairs	0.017	0.027	0.0
10/19/2016	13:16	Steel Stairs	0.019	0.028	0.0
10/19/2016	14:15	Steel Stairs	0.012	0.030	0.0
10/19/2016	14:55	Steel Stairs	0.009	0.036	0.0

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GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

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Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
10/20/2016	8:07	Steel Stairs	0.012	0.001	0.0
10/20/2016	8:40	Steel Stairs	0.014	0.002	0.0
10/20/2016	9:32	Steel Stairs	0.014	0.004	0.0
10/20/2016	12:50	Steel Stairs	0.012	0.011	0.0
10/20/2016	13:48	Steel Stairs	0.016	0.013	0.0
10/24/2016	9:30	Steel Stairs	0.007	0.000	0.0
10/24/2016	10:05	Steel Stairs	0.029	0.002	0.0
10/24/2016	12:53	Steel Stairs	0.005	0.008	0.0
10/24/2016	13:37	Steel Stairs	0.012	0.006	0.0
10/24/2016	13:59	Steel Stairs	0.000	0.006	0.0
10/24/2016	14:38	Steel Stairs	0.006	0.008	0.0
10/24/2016	14:58	Steel Stairs	0.008	0.008	0.0
10/25/2016	7:44	Site Gate	0.007	0.000	0.0
10/25/2016	8:02	Site Gate	0.009	0.001	0.0
10/25/2016	8:53	Site Gate	0.008	0.001	0.0
10/25/2016	10:31	Site Gate	0.004	0.003	0.0
10/25/2016	11:00	Site Gate	0.037	0.012	0.0
10/25/2016	11:45	Site Gate	0.011	0.013	0.0
10/25/2016	12:51	Site Gate	0.005	0.017	0.0
10/25/2016	14:00	Site Gate	0.002	0.021	0.0
10/25/2016	14:26	Site Gate	0.018	0.028	0.0
10/26/2016	8:10	Fence Near Bollards	0.000	0.001	0.0
10/26/2016	8:47	Fence Near Bollards	0.005	0.003	0.0
10/26/2016	10:24	Fence Near Bollards	0.008	0.008	0.0
10/26/2016	11:18	Fence Near Bollards	0.003	0.006	0.0
10/26/2016	11:45	Fence Near Bollards	0.002	0.007	0.0
10/26/2016	13:02	Fence Near Bollards	0.005	0.008	0.0
10/27/2016	7:35	Gate Near Trailer	0.000	0.000	0.0
10/27/2016	9:48	Gate Near Trailer	0.024	0.008	0.0
10/27/2016	10:10	Gate Near Trailer	0.022	0.007	0.0
10/27/2016	10:57	Gate Near Trailer	0.000	0.009	0.0
10/28/2016	7:30	LNG Gate	0.020	0.000	0.0
10/28/2016	9:00	LNG Gate	0.025	0.005	0.0
10/28/2016	10:15	LNG Gate	0.023	0.006	0.0
10/28/2016	12:00	LNG Gate	0.022	0.010	0.0
10/28/2016	13:00	LNG Gate	0.021	0.012	0.0
10/28/2016	14:30	LNG Gate	0.026	0.012	0.0
10/29/2016	8:07	LNG Gate	0.005	0.001	0.0
10/29/2016	8:40	LNG Gate	0.019	0.001	0.0
10/29/2016	10:35	LNG Gate	0.005	0.003	0.0
10/29/2016	11:00	LNG Gate	0.011	0.003	0.0
10/29/2016	11:23	LNG Gate	0.003	0.003	0.0
10/29/2016	12:32	LNG Gate	0.004	0.004	0.0
10/29/2016	13:05	LNG Gate	0.051	0.004	0.0
10/29/2016	13:58	LNG Gate	0.008	0.005	0.0

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GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

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Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
10/31/2016	9:28	LNG Gate	0.008	0.002	0.0
10/31/2016	10:03	LNG Gate	0.011	0.002	0.0
10/31/2016	10:31	LNG Gate	0.003	0.002	0.0
10/31/2016	11:44	LNG Gate	0.005	0.003	0.0
10/31/2016	12:50	LNG Gate	0.019	0.004	0.0
10/31/2016	15:15	LNG Gate	0.003	0.006	0.0
11/1/2016	7:30	Booster House	0.022	0.000	0.0
11/1/2016	8:03	Booster House	0.024	0.002	0.0
11/1/2016	9:15	Booster House	0.020	0.000	0.0
11/1/2016	10:12	Booster House	0.025	0.009	0.0
11/1/2016	12:03	Booster House	0.022	0.014	0.0
11/1/2016	12:51	Booster House	0.023	0.016	0.0
11/1/2016	13:27	Booster House	0.012	0.017	0.0
11/1/2016	13:58	Booster House	0.017	0.018	0.0
11/1/2016	14:36	Booster House	0.019	0.019	0.0
11/2/2016	7:30	Booster House	0.022	0.000	0.0
11/2/2016	8:15	Booster House	0.011	0.002	0.0
11/2/2016	9:45	Booster House	0.023	0.006	0.0
11/2/2016	10:45	Booster House	0.006	0.008	0.0
11/2/2016	13:00	Booster House	0.014	0.009	0.0
11/2/2016	14:30	Booster House	0.017	0.01	0.0
11/3/2016	7:05	Steel Stairs	0.069	0.000	0.0
11/3/2016	8:40	Steel Stairs	0.059	0.011	0.0
11/3/2016	9:23	Steel Stairs	0.055	0.017	0.0
11/3/2016	9:50	Steel Stairs	0.069	0.021	0.0
11/3/2016	10:23	Steel Stairs	0.047	0.025	0.0
11/3/2016	13:30	Steel Stairs	0.075	0.050	0.0
11/3/2016	15:22	Steel Stairs	0.042	0.062	0.0
11/3/2016	15:58	Steel Stairs	0.049	0.060	0.0
11/4/2016	7:51	Steel Stairs	0.012	0.000	0.0
11/4/2016	8:23	Steel Stairs	0.013	0.001	0.0
11/4/2016	9:20	Steel Stairs	0.007	0.003	0.0
11/4/2016	9:58	Steel Stairs	0.005	0.004	0.0
11/4/2016	10:55	Steel Stairs	0.007	0.005	0.0
11/4/2016	11:40	Steel Stairs	0.004	0.006	0.0
11/4/2016	12:32	Steel Stairs	0.004	0.006	0.0
11/4/2016	14:24	Steel Stairs	0.015	0.008	0.0
11/4/2016	15:55	Steel Stairs	0.004	0.010	0.0
11/5/2016	7:45	Steel Stairs	0.011	0.002	0.0
11/5/2016	8:30	Steel Stairs	0.012	0.003	0.0
11/5/2016	9:15	Steel Stairs	0.010	0.004	0.0
11/5/2016	10:49	Steel Stairs	0.011	0.005	0.0
11/5/2016	11:23	Steel Stairs	0.012	0.006	0.0
11/5/2016	12:58	Steel Stairs	0.010	0.007	0.0
11/5/2016	1:37	Steel Stairs	0.009	0.008	0.0
11/5/2016	14:46	Steel Stairs	0.008	0.009	0.0

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

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Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
11/7/2016	8:41	Steel Stairs	0.006	0.001	0.0
11/7/2016	9:31	Steel Stairs	0.018	0.002	0.0
11/7/2016	10:12	Steel Stairs	0.005	0.003	0.0
11/7/2016	11:17	Steel Stairs	0.005	0.005	0.0
11/7/2016	12:38	Steel Stairs	0.006	0.006	0.0
11/7/2016	13:15	Steel Stairs	0.004	0.007	0.0
11/7/2016	14:29	Steel Stairs	0.000	0.008	0.0
11/7/2016	14:55	Steel Stairs	0.009	0.008	0.0
11/7/2016	15:25	Steel Stairs	0.009	0.005	0.0
11/8/2016	8:39	Steel Stairs	0.029	0.002	0.0
11/8/2016	9:23	Steel Stairs	0.025	0.004	0.0
11/8/2016	10:28	Steel Stairs	0.021	0.011	0.0
11/8/2016	10:59	Steel Stairs	0.013	0.014	0.0
11/8/2016	12:44	Steel Stairs	0.087	0.021	0.0
11/8/2016	15:29	Steel Stairs	0.029	0.034	0.0
11/9/2016	9:47	Steel Stairs	0.039	0	0.0
11/9/2016	11:05	Steel Stairs	0.026	0.007	0.0
11/9/2016	13:15	Steel Stairs	0.028	0.015	0.0
11/9/2016	13:45	Steel Stairs	0.022	0.017	0.0
11/10/2016	12:46	Steel Stairs	0.011	0.008	0.0
11/10/2016	13:45	Steel Stairs	0.007	0.010	0.0
11/11/2016	7:00	Booster House	0.009	0.001	0.0
11/11/2016	8:45	Booster House	0.010	0.003	0.0
11/11/2016	10:45	Booster House	0.013	0.007	0.0
11/11/2016	12:00	Booster House	0.013	0.008	0.0
11/11/2016	13:00	Odorant	0.020	0.012	0.0
11/11/2016	14:00	Odorant	0.019	0.013	0.0
11/11/2016	15:00	Odorant	0.020	0.015	0.0
11/11/2016	15:30	Odorant	0.027	0.018	0.0
11/12/2016	7:10	Main Gate	0.018	0.011	0.0
11/12/2016	8:30	Forebay 1	0.017	0.012	0.0
11/12/2016	10:30	Forebay 1	0.021	0.015	0.0
11/12/2016	11:50	Forebay 4	0.006	0.014	0.0
11/12/2016	12:35	Forebay 4	0.010	0.011	0.0
11/12/2016	13:40	Trench Drain	0.008	0.011	0.0
11/14/2016	7:45	New Gate	NR	0.001	0.0
11/14/2016	8:53	New Gate	NR	0.003	0.0
11/14/2016	9:15	New Gate	NR	0.005	0.0
11/14/2016	10:45	New Gate	NR	0.008	0.0
11/14/2016	11:37	New Gate	NR	0.011	0.0
11/14/2016	12:57	New Gate	NR	0.012	0.0
11/14/2016	13:10	New Gate	NR	0.012	0.0
11/14/2016	14:36	New Gate		0.012	0.0
11/15/2016	8:03	Trailer	0.022	0.002	0.0
11/15/2016		Stopped due to steady rain			

Appendix K - Perimeter Air Monitoring Results

GZA Job No. 03.0033554.00

Holder 18/21 Capping Project

4/20/2017

Providence, Rhode Island

Date	Time	Location	Dust Instanteous (mg/m ³)	Dust TWA (mg/m ³)	TVOC (ppm)
11/16/2016	7:42	Steel Stairs	0.008	0.000	0.0
11/16/2016	8:29	Steel Stairs	0.012	0.002	0.0
11/16/2016	9:40	Steel Stairs	0.004	0.004	0.0
11/16/2016	10:26	Steel Stairs	0.004	0.004	0.0
11/16/2016	11:16	Steel Stairs	0.002	0.005	0.0
11/16/2016	11:41	Steel Stairs	0.004	0.006	0.0
11/16/2016	12:37	Steel Stairs	0.003	0.008	0.0
11/16/2016	14:31	Steel Stairs	0.008	0.009	0.0
11/16/2016	15:00	Steel Stairs	0.006	0.010	0.0
11/16/2016	15:34	Steel Stairs	0.006	0.010	0.0
11/17/2016	7:20	Booster House	0.035	0.000	0.0
11/17/2016	7:55	Booster House	0.038	0.003	0.0
11/17/2016	8:38	Booster House	0.037	0.008	0.0
11/17/2016	9:48	Booster House	0.024	0.011	0.0
11/17/2016	11:23	Booster House	0.011	0.017	0.0
11/17/2016	11:45	Booster House	0.013	0.018	0.0
11/17/2016	13:07	Booster House	0.009	0.020	0.0
11/17/2016	13:27	Booster House	0.009	0.020	0.0
11/17/2016	14:05	Booster House	0.010	0.022	0.0
11/17/2016	14:43	Booster House	0.028	0.022	0.0
11/18/2016	7:26	Compressor House	0.022	0.000	0.0
11/18/2016	8:12	Compressor House	0.039	0.003	0.0
11/18/2016	9:01	Compressor House	0.030	0.005	0.0
11/18/2016	10:23	Compressor House	0.019	0.007	0.0
11/18/2016	11:15	Compressor House	0.008	0.008	0.0
11/18/2016	12:29	Compressor House	0.007	0.009	0.0

*NR: Not recorded



GZA GeoEnvironmental, Inc.