Remedial Investigation/Feasibility Study

Ninth and Lenora Redevelopment
2101 9th Avenue
Seattle, Washington
Facility/Site #91413494
Cleanup Site ID: 1802
VCP Project No. NW2980

for
Ninth and Lenora LLC

March 24, 2016

GeoEngineers
Earth Science + Technology

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GeoEngineers File No. 21138-001-03

March 24, 2016

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EXECUTIVE SUMMARY

This document presents the Remedial Investigation and Feasibility Study (RI/FS) for the Ninth and Lenora development property (herein referred to as the "subject property") located in the Denny Triangle neighborhood and bounded by retail properties, 9th Avenue, Lenora Street, and an alley in downtown Seattle, Washington. The subject property is shown relative to surrounding physical features in the Vicinity Map, Figure 1. The subject property was enrolled in the Voluntary Cleanup Program (VCP) administered by the Washington State Department of Ecology (Ecology) on June 8, 2015. The subject property is registered in Ecology databases as Facility/Site No. 91413494, Cleanup Site ID: 1802, and VCP Project No. NW2980. It is important to note that characterization information reported in this RI was collected before, and during, construction activities. The cleanup action at the subject property occurred concurrently with construction/redevelopment; and as a result, a Cleanup Action Report was prepared by GeoEngineers, Inc. (GeoEngineers) as a companion document that will be submitted to Ecology together with this RI/FS to support the request for a No Further Action Determination (NFA) for the subject property. The Cleanup Action Report documents that all contaminated soil was removed from within the bounds of the subject property. In addition, groundwater is deep (greater than 50 feet) with over 40 feet of separation from contamination that was removed and there is no evidence that groundwater is contaminated at the subject property. All work conducted at the Site has been performed in accordance with the requirements of the Model Toxics Control Act (MTCA) and its implementing regulations found in Washington Administrative Code (WAC) 173-340 (collectively MTCA).

The subject property consists of two parcels encompassing approximately 0.49-acres and a limited west portion (0.025 acre) of the public alley. The City of Seattle (City) will own the remainder (0.032 acre) of the alley. The alley ownership will transfer in 2017 to 2018 at the conclusion of the project (see Figure 2). The North Parcel (King County Parcel 0660000540) was the former location of Enterprise, a car rental company; and the South Parcel (King County Parcel 0660000545) was the former location of a 2-story office/warehouse building with the Woodside Braseth Gallery on the ground floor, office space upstairs, and a garage below. At the time of this report, the subject property is currently under redevelopment consisting of a 42-story residential tower with some retail space and six levels of subgrade parking.

The "Site" consists of those areas where hazardous substances in excess of applicable cleanup levels have come to be located as a result of the historical release of hazardous substances from the subject property. Therefore, the "Site" includes the subject property, a limited portion of Lenora Street, and a limited southeast portion of the alley. Historic potential sources of contamination include: a wood yard, printing facility, metal shop, and vehicle servicing/auto restoration garages. Also, the following historic facilities were identified: a former boiler room, chimney and furnace, former car wash area, one former petroleum underground storage tank (UST; removed in 2002), one closed-in-place petroleum UST and related fill ports and piping, and undocumented fill that was imported to the subject property. Localized petroleum contaminated native soil was identified as part of the UST removal and decommissioning activities in 2002 and 2015. In addition to petroleum hydrocarbons, metals were identified in soil and groundwater and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) were identified in soil, as part of this RI.

The following is a summary of the conclusions of this RI/FS.

Soil

Soil primarily contaminated with petroleum hydrocarbons, PAHs and to a lesser extent with gasoline-range hydrocarbons, benzene, xylenes, (associated with the USTs) and/or lead (observed at only two locations in fill soil) was identified in areas where historic sources of contamination and/or imported fill exist at the subject property. Contaminated soil also was identified in a limited portion of the adjacent rights-of-way (Lenora Street and the alley). Based on the findings of the RI, contaminated soil at the "Site" (subject property, Lenora Street, and the alley) was fully delineated and addressed in this RI/FS and during the Cleanup Action in accordance with MTCA requirements.

Gasoline and benzene contamination (greater than MTCA Method A cleanup levels) was detected in fill soil within the utility excavation performed in 9th Avenue, and cPAHs and metals contamination (greater than MTCA Method A cleanup levels) was identified in shallow fill soil at one location on the City-owned adjacent triangular parcel (GEI-2, King County Parcel 0660000485; located south of the subject property across the alley). However, this contamination is not associated with releases from the subject property based on the chemical analytical data and therefore is not part of the Site. Rather, the 9th Avenue contamination is related to either an undocumented localized spill of hydrocarbons within 9th Avenue or originated from an unknown off-property/upgradient source across 9th Avenue. The contamination in Triangle Parcel is related to surficial and localized conditions around a catch basin resulting from former commercial use of the general area or related to undocumented imported fill placed at the Triangle Parcel.

Perched Water

Please note that for this project and the RI/FS Report, the surface of 9th Avenue (approximate Elevation 87 feet) is considered as the ground surface. Perched water beneath the Site was intermittently encountered during remedial investigations at a depth of 27 feet below ground surface (bgs); corresponding to approximate Elevation 60 feet NAVD88. Although petroleum hydrocarbons (in B-2 and B-3) and metals (arsenic, chromium, lead, and/or mercury [in B-3 only]) were detected at concentrations greater than MTCA Method A cleanup levels in perched water these results are not representative of groundwater quality at the Site. Because these discrete, one-time samples were obtained directly from the boreholes of borings they are considered to be reconnaissance samples. These samples were biased high for contaminants because silt particles were present in the samples as a result of the sampling process. Perched water is not a media of concern at this Site because it was not encountered within the mass excavation limits. Additionally, groundwater samples collected from monitoring wells completed to the regional aquifer beneath the Site (approximate Elevation 14 feet, NAVD88) were tested and did not contain contaminants of concern at levels of regulatory significance as represented in the next section of this Executive Summary.

Groundwater

Groundwater was observed at depths of approximately 53.3 and 55.39 feet (approximate Elevations 16 and 14 feet, NAVD88) in monitoring well G-1 (measured from the local ground surface at G-1 which was approximately 69 feet, NAVD88), at the subject property. Groundwater samples obtained and tested in April 2014 and July 2015 from G-1, screened within the regional aquifer showed that arsenic, chromium, and lead were present at concentrations less than MTCA Method A cleanup levels and petroleum hydrocarbons were not detected. Additionally, a groundwater sample from an existing off-property monitoring well MW-5 located across Lenora Street indicated no detections of petroleum. Monitoring well locations are shown in Figure 2 and corresponding Elevations of G-1 and MW-5 are shown on Figure 5 and Figure 6, respectively. Therefore, based on the groundwater chemical data, the aquifer beneath the Site is not impacted.

Cleanup Action

A cleanup action was conducted at the subject property concurrent with redevelopment activities. Although the cleanup action is reported separately, a brief summary of the cleanup action is included in this RI/FS report because observations and chemical analytical testing completed during construction excavation supports the understanding of the magnitude and extent of contamination identified at the Site. For a detailed description of the cleanup action, remedial excavation areas, characterization and/or confirmation soil samples obtained, and soil disposal information, please refer to our Cleanup Action Report submitted under separate cover.

Redevelopment activities at the subject property included excavation to a depth of approximately 80 feet bgs (approximate Elevation 7 feet, NAVD88). The cleanup consisted of excavation and permitted off-site disposal of all contaminated soil exceeding cleanup levels completed at the subject property in conjunction with the redevelopment project. Additionally, the cleanup action included the removal of USTs and related fill ports and piping at the subject property. The contaminated soil excavation and handling/disposal activities were completed in full accordance with GeoEngineers "9th and Lenora Construction Contingency Plan" dated December 12, 2014 which was submitted to Ecology in December 2014, prior to construction.

During the concurrent construction and remedial excavation, it was not practicable to excavate limited areas of residual contaminated soil extending beyond the subject property boundaries (into Lenora Street and the alley). The FS portion of this report will demonstrate that the residual contaminated soil that remains off-property in limited portions of rights-of-way does not pose a threat to human health or the environment and could not practicably be removed due to significant utility, foundation and street infrastructure without expending disproportionate cost for commensurate environmental benefit. Additionally, soil in these areas remains capped by the rights-of-way pavement and is situated well above the deep regional groundwater table which is greater than 50 feet beneath the subject property. For these reasons, the cleanup action is permanent to the maximum extent practicable as required by the MTCA. GeoEngineers proposes use of an Environmental Covenant in accordance with WAC 173-340-440 to implement appropriate institutional controls in the areas of rights-of-way (Lenora Street and the alley) where residual soil contamination remains in-place. This action will require the agreement of the City of Seattle.

Ninth and Lenora LLC is performing the RI/FS in accordance with Ecology's Voluntary Cleanup Program, MTCA and associated implementing regulations (i.e., Chapter 173-340 WAC). The objective of the RI/FS and subsequent remedial actions is to provide the basis for issuance of an opinion from Ecology stating that no further remedial action is necessary at the subject property (a property-specific NFA Determination).

This Executive Summary should be used only in the context of the full report for which it is intended.

1.0 INTRODUCTION

This document presents the Remedial Investigation and Feasibility Study (RI/FS) for the Ninth and Lenora development property (herein referred to as the "subject property") located in the Denny Triangle neighborhood and bounded by retail properties, 9th Avenue, Lenora Street, and a public alley in downtown Seattle, Washington. The subject property consists of two parcels (North Parcel [King County Parcel 0660000540] with a physical address 2118 Westlake Avenue and South Parcel [King County Parcel 0660000545] with a physical address of 2101 9th Avenue) encompassing approximately 0.49-acres and a limited west portion (0.025 acre) of an alley. The City of Seattle (City) will own the remainder (0.032 acre) of the alley (see Figure 2). The alley ownership will transfer in 2017 to 2018 at the conclusion of the redevelopment project. The City of Seattle also owns a triangular parcel located southwest of the subject property (across the alley) which is slated to become a public park. Some site characterization was completed as part of this RI on the City's 9th Avenue, Lenora Street, alley and triangular parcel.

Please note that for this project, the surface of 9th Avenue (approximate Elevation 87 feet, NAVD88) is considered as the ground surface. The approximate surface elevations of Lenora Street, alley, and Triangular Parcel are 87, 69, and 67 feet; respectively. The subject property grades drop about 10 feet from southeast to northwest (ranging from approximate Elevation 87 feet in the southeast to approximate Elevation 75 feet in the northwest).

2.0 SCOPE AND PURPOSE

The objective of this document is to present the results of the RI/FS, including an evaluation of feasible cleanup actions to address soil contamination at the Site. The results of previously completed investigations and RI activities are presented to describe the nature and extent of contamination at the subject property. Ninth and Lenora LLC is performing the RI/FS in accordance with the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP), the Model Toxics Control Act (MTCA) and associated implementing regulations (i.e., Chapter 173-340 Washington Administrative Code [WAC]). The objective of the RI/FS and subsequent remedial actions is to facilitate issuance of an opinion from Ecology stating that no further remedial action is necessary at the subject property (a property-specific NFA Determination).

3.0 PROPERTY DESCRIPTION AND BACKGROUND

As indicated in the Introduction, the subject property is located in the Denny Triangle neighborhood and bounded by retail properties, 9th Avenue, Lenora Street, and an alley in downtown Seattle, Washington and consists of two parcels (North Parcel [King County Parcel 0660000540] and South Parcel [King County Parcel 0660000545] encompassing approximately 0.49-acres, and a limited west portion (0.025 acre) of an alley.

The North Parcel of the subject property was the former location of Enterprise, a car rental company. The South Parcel of the subject property was the former location of a 2-story office/warehouse building with the Woodside Braseth Gallery on the ground floor, office space upstairs, and a garage below. At the time of this report, the buildings had been demolished and the subject property was under redevelopment consisting of a 42-story residential tower with some retail space and six levels of subgrade parking. The subject

property was enrolled in the VCP administered by Ecology on June 8, 2015 (Facility/Site No. 91413494, Cleanup Site ID: 1802, and VCP Project No. NW2980). The subject property location relative to surrounding physical features is shown in the attached Figure 1. The subject property layout is shown in attached Figure 2.

It is important to note that characterization information reported in this RI was collected before, and during, construction activities. A cleanup action at the subject property occurred concurrently with construction/redevelopment; and as a result, a Cleanup Action Report was prepared by GeoEngineers, Inc. (GeoEngineers) as a companion document to be submitted to Ecology along with this RI/FS. The Cleanup Action Report documents that all contaminated soil was removed from within the bounds of the subject property. In addition, groundwater is not contaminated. This RI/FS report utilizes and reports on the soil chemical analytical information that was obtained during remedial investigations completed prior to subject property redevelopment, utility-related excavations outside the mass excavation limits, and during construction excavation. All work conducted at the Site has been performed in full accordance with the requirements of MTCA and its implementing regulations found in WAC 173-340 (collectively MTCA).

Previous subject property uses include historical boiler and furnace/chimney systems associated with the former subject property buildings), one former underground storage tank (UST; removed in 2002) and one existing closed-in-place UST, UST-related elements (e.g., fill ports, piping, etc.), former car washing areas, historic property uses (such as wood yard, printing facility, metal shops, and former vehicle servicing/auto restoration garage), unknown housekeeping practices of former property occupants, and likely undocumented fill that may have been imported to the subject property. More detail on historic property use is provided in Section 3.1.

The "Site" as defined by Ecology's MTCA (Chapter 173-340) is those areas where hazardous substances have come to be located as a result of the historical release of hazardous substances related to the historic site uses. Based on the soil data obtained as part of the RI and additional information that was obtained during construction excavation, the Site appears to extend beyond portions of the subject property boundaries into limited portions of the adjacent Lenora Street and adjacent alley.

The mass excavation which occurred from July 2015 through September 2015 extended from lot-line to lot-line to an approximate depth of 80 feet (approximate Elevation 7 feet, NAVD88) below the 9th Avenue right-of-way surface grade (approximate Elevation 87 feet—considered ground surface for this study). All contaminated soil within the subject property boundaries identified over the course of the RI and construction activities was removed as part of the construction excavation. The contaminated soil excavation and handling/disposal activities were completed in full accordance with GeoEngineers "9th and Lenora Construction Contingency Plan" dated December 12, 2014 which was submitted to Ecology in December 2014, prior to construction. For a description of the cleanup action, remedial excavation areas, characterization and confirmation soil samples obtained, and soil disposal information, please refer to our Cleanup Action Report submitted under separate cover.

3.1. Historic Operations and Property Uses

GeoEngineers completed a Phase I Environmental Site Assessment (ESA) report for the subject property in September 2002, October 2007, and a Phase I ESA update in August 2013. The following is a summary of our research and findings from the 2007 and 2013 Phase I ESAs. The approximate locations of historical features referenced in the following summary are shown on the attached Figure 2.

2118 Westlake Avenue (North Parcel - 0660000540)

Based on the historic fire insurance (Sanborn) maps, the parcel was undeveloped in 1905. A small structure (possibly a store) and parking were present on the parcel in 1936. Based on the tax records, a single-story office building with basement was constructed between 1946 and 1948 and was used by Westlake Chevrolet Company for car sales, storage and repair. The tax assessor records indicate that a boiler house was also present on the parcel and the building was heated by hot water and an oil burner. Based on our review of documents obtained from the City of Seattle Department of Construction and Land Use (DCLU) (now known as Department of Planning and Development, DPD), a permit was issued to Westlake Chevrolet in 1980 to construct an underground tunnel in order to provide access to the basement of the single-story building from the underground parking garage located on parcel 0660000485 (the City of Seattle owned Triangle Parcel).

Based on our review of the ownership records, Westlake Chevrolet Company owned this parcel from 1946 until the mid-1980s (for car sales and possibly auto repair) when Mr. Howard Anderson (father of Mr. Chuck Anderson, the property owner in 2007) acquired the parcel. Based on our interview with Mr. Chuck Anderson, the parcel was occupied by a used car sales office until 1990s and Enterprise had leased the parcel since 1993. Mr. Chuck Anderson indicated that fill from an unknown source may have been brought to the parcels during the construction of the building.

2101 9th Avenue (South Parcel - 0660000545)

Based on the historic fire insurance (Sanborn) maps and tax assessment records, the parcel was undeveloped from at least 1893 until approximately 1905 when a “wood yard” was located on the parcel. A two-story office/retail building on the parcel was constructed in 1924 as a garage. The building contained a “sump” (possibly the basement catch basin), and was originally heated by an oil burner. A building plan dated 1924 indicated a “wash rack” in the basement of the building.

Based on our review of the City Directories, the parcel was used by Westlake Chevrolet Company as an auto repair facility between the 1940s and the 1970s. The parcel was reportedly used as a printing facility during the 1980s and 1990s, and included a camera area, dark room and bindery area, based on the site building plan dated 1981. Ihler Automotive, Print Management, Metal Solutions and JLR Design Group occupied the building in 1996. A metal shop is shown in the west corner of the basement in 1998 building plans.

Based on our review of the ownership records, this parcel was owned by a lumber company (likely Providence Lumber Co.) from at least 1905 to 1924 when Mr. G.L. Seibert acquired the parcel, according to City engineering records. From 1926 to at least 1935, the Victor Improvement Company owned the parcel. Westlake Chevrolet Company leased the parcel from approximately 1943 to 1977. Peter Frank and Associate Printers occupied the parcel in 1983 through 1994, according to city directories. Mr. Gary Pidig (deceased) owned the parcel from approximately 1988 to 1997 when Mr. David Murphy of Murphy Varey, P.S., acquired the parcel in 1997. Based on our interview with Mrs. Vicky Clayton, Cornish College Cornish College of Arts had owned the parcel since 2003.

Both parcels are currently under redevelopment and all former improvements were demolished during construction excavation in 2015.

3.2. Subject Property Conditions

GeoEngineers completed geotechnical and environmental subsurface explorations at the subject property to depths ranging between approximately 7 and 86.5 feet below subject property ground surface. A summary of subject property surface and subsurface conditions is provided below.

3.2.1. Surface Conditions

Existing subject property grades drop about 10 feet from southeast to northwest (ranging from approximate Elevation 87 feet in the southeast to approximate Elevation 75 feet in the northwest). The alley along the west side of the subject property historically provided access to the lowest level of the former building and slopes down from approximate Elevation 75 feet near Westlake Avenue to approximate Elevation 69 feet near the entrance to the former below grade garage of the former 2101 9th Avenue building. The alley does not extend through to Lenora Street. A permanent slope currently exists between the end of the alley and Lenora Street. At the time of this report, subject property buildings were demolished for redevelopment.

3.2.2. Subsurface Soil Conditions

The soils encountered at the site consist of relatively shallow fill overlying recent deposits and competent glacially consolidated soils. Fill generally consists of loose to medium dense silty sand with variable gravel and cobble content and occasional brick, charcoal or wood debris. Based on historical research, the block is located on the eastern edge of the 1928-1930 Denny Regrade, and portions of this area are reported to have up to 25 feet of fill as part of the regrade process. The thickness of fill encountered in the explorations completed at the site ranged from approximately 6 to 15 feet.

The recent deposits typically consist of soft to hard silt and clay with occasional sand interbeds and variable gravel content or medium dense to dense sand with variable silt and gravel content. The glacially consolidated soils were encountered below the fill and recent deposits, where present. The glacially consolidated soils encountered in the explorations were typically till-like deposits, which consist of very dense silty sand with gravel and variable cobble and boulder content with isolated layers of hard silt and clay.

3.2.3. Perched Water Conditions

Although perched water was encountered intermittently in some of the site characterization explorations completed during remedial investigations, it was not encountered within the mass excavation limits at the subject property.

3.2.4. Groundwater Conditions

The static groundwater table associated with the regional aquifer was measured in former monitoring well G-1 on December 27, 2013 and July 1, 2014. The measured depth was approximately 53.30 feet and 55.39 (approximate Elevations 16 and 14 feet, NAVD88) respectively; below the local subject property ground surface (approximate Elevation 69 feet, NAVD88) at G-1 location. The approximate location and local elevation of G-1 is shown in Figure 2 and Figure 5, respectively.

3.2.5. Soil Vapor Conditions

Soil vapor conditions were not evaluated at the subject property because the planned construction excavation depth of approximately 80 feet below ground surface (bgs; approximate Elevation 7 feet) results

in the removal of all source material that could result in vapor generation. The construction excavation depth is below the 9th Avenue ground surface (approximate Elevation 87 feet, NAVD88) which is considered as the ground surface for this project. The surface elevations within the subject property boundaries ranged from approximately 87 feet in the southeast to approximately 75 feet in the northwest portions of the subject property.

4.0 REMEDIAL INVESTIGATION

This section summarizes the results of remedial investigation (RI) activities conducted at the subject property and immediate vicinity. The purpose of the RI is to collect data and information necessary to define the extent of contamination and to characterize the soil and groundwater beneath the Site sufficiently to support selection of a MTCA-compliant final remedy. Ninth and Lenora LLC is performing the RI in accordance with the Ecology VCP, MTCA and associated implementing regulations (i.e., Chapter 173-340 WAC).

4.1. Summary of Remedial Investigations

GeoEngineers completed several geotechnical and environmental explorations at the subject property and immediate vicinity to evaluate subsurface conditions. Twenty-six explorations (soil borings B-1 through B-9, and HA-1 in February 2002, soil borings GEI-1 through GEI-6 in October 2007, soil borings GEI-7 and GEI-8 and a shallow monitoring well MW-01 in July 2013, soil borings G-2, E-1, and E-2, and a deep monitoring well G-1 in December 2013, and borings DP-1 through DP-5 in November 2014) were completed to depths ranging from approximately 7 and 86.5 feet to evaluate soil and perched water conditions. GeoEngineers completed a shallow monitoring well (MW-01) to an approximate depth of 18 feet and a deep monitoring well (G-1) to an approximate depth of 86.5 feet to evaluate groundwater quality beneath the subject property. GeoEngineers utilized data from an existing off-property monitoring well (MW-5) located on the east sidewalk of Lenora Street. MW-5 was completed by GeoEngineers in 1993 to an approximate depth of 60 feet below local ground surface for a different project currently developed as Washington Talking Book Braille Library located opposite to the subject property across Lenora Street. All depths indicated in this paragraph are measured from the respective local ground surfaces prevailing at the time these explorations were completed. Following is a brief summary of the remedial investigations testing and results:

- **Soil**. Forty-nine soil samples were tested for petroleum (gasoline-, and/or diesel-, and/or heavy oil-range hydrocarbons), 31 samples were tested for benzene, ethylbenzene, toluene, and xylenes (BETX), 20 soil samples were tested for one or more metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver), 19 soil samples were tested for polycyclic aromatic hydrocarbons (PAHs), and nine soil samples were tested for semi-volatile organic compounds (SVOCs). According to the chemical analytical data, soil primarily contaminated with petroleum hydrocarbons, PAHs and to a lesser extent with gasoline-range hydrocarbons, benzene, xylenes, (associated with the USTs) and/or lead (observed at two locations in fill soil) was identified in fill soil at the Site. The historic property uses (wood yard, printing facility, metal shop, and vehicle servicing/auto restoration garages), historic facilities (former boiler room, chimney and furnace, former car wash area, one former petroleum UST (removed in 2002), one closed-in-place petroleum UST and related fill ports and piping), and undocumented fill that was imported to the Site are the potential sources of identified soil contamination.
- **Perched Water**. Six discrete, one-time perched water samples were obtained directly from the boreholes of the borings where encountered. Five samples were tested for petroleum (gasoline-, and/or diesel-, and/or heavy oil-range hydrocarbons), four samples were tested for BETX, and three samples

were tested for volatile organic compounds (VOCs). Although petroleum hydrocarbons (in B-2 and B-3) and metals (arsenic, chromium, lead, and/or mercury [in B-3 only]) were detected at concentrations greater than MTCA Method A cleanup levels in perched water; these results are not representative of groundwater quality at the Site. Because these discrete, one-time samples were obtained directly from the boreholes of borings they should be considered reconnaissance samples. These samples were biased high for contaminants because silt particles were present in the samples as a result of the sampling process. Perched water is not a media of concern at this Site because it was not encountered within the mass excavation limits. Additionally, groundwater samples collected from monitoring wells completed to the regional aquifer beneath the Site (approximate Elevation 14 feet, NAVD88) were tested and did not contain contaminants of concern at levels of regulatory significance as represented below.

- **Groundwater**. Shallow monitoring well MW-01 was observed dry on the days of sampling. Groundwater samples were collected from deep monitoring well G-1 in December 2013, April 2014, and July 2015. Samples were tested for petroleum (gasoline-, diesel-, and heavy oil-range hydrocarbons), and/or BETX, and/or metals (arsenic, chromium, lead, and mercury). Groundwater samples obtained and tested from G-1, screened within the regional aquifer, showed that arsenic, chromium, and lead were present at concentrations less than MTCA Method A cleanup levels and petroleum hydrocarbons were not detected. Additionally, a September 1993 groundwater sample from an existing off-property monitoring well MW-5 previously installed by GeoEngineers located across Lenora Street indicated no petroleum detections.

Additionally, soil was further characterized upon discovery as either contaminated or impacted soil during construction activities (such as mass excavation, off-property utility excavations, and the installation of shoring walls) starting in April 2015. Definitions of contaminated and impacted soil are as follows: *"contaminated"* is soil that exceeds MTCA Method A cleanup levels and physical evidence of contamination (moderate to heavy sheen, odor, staining) is observed; whereas, *"impacted"* is soil that has concentrations of contaminants less than cleanup levels but greater than background and physical evidence of contamination (slight sheen, odor, staining) is observed. These definitions are consistent with those identified in GeoEngineers "9th and Lenora Construction Contingency Plan" dated December 12, 2014 which was submitted to Ecology in December 2014, prior to construction. Following sections provide a summary of the results of each exploration and a brief summary of characterization activities of contaminated and impacted soil encountered during construction.

Soil chemical analytical results from the remedial investigations are summarized in Tables 1 and 2. Perched water and groundwater chemical analytical results from the remedial investigations are summarized in Tables 3 and 4. The approximate location of all remedial investigation explorations are shown on attached Figure 2. The approximate location of soil characterization samples obtained during construction and a graphical summary of soil chemical analytical data is shown on attached Figure 3. A graphical summary of petroleum hydrocarbons and metals chemical analytical data in perched water and groundwater is shown in attached Figure 4. Subsurface cross-sections of the subject property and vicinity using chemical analytical data generated from remedial investigations are shown in attached Figures 5 through 7. A copy of all remedial investigations explorations logs is presented in Appendix B. A copy of the laboratory reports is presented in Appendix C.

4.1.1. Construction-Phase Site Characterization, GeoEngineers, Inc., April 2015 through June 2015

During excavation activities for installing a deep sewer east of the subject property, GeoEngineers obtained soil samples to characterize soil in 9th Avenue. GeoEngineers also obtained soil samples from the east property boundary to evaluate whether soil exceeding MTCA cleanup levels for benzene in boring B-1 was a localized condition or more extensive and potentially present at the subject property (benzene wasn't present on the subject property and appeared to be localized within a limited area in 9th Avenue).

Soil chemical results from the construction phase characterization is summarized in Table 5. Laboratory reports are included in Appendix C. A brief summary of soil sampling and testing results from the above locations is presented below:

- **Deep Sewer Utility Excavation – 9th Avenue**. The utility excavation was completed in the 9th Avenue right-of-way for installing a deep sewer tie-in associated with the planned redevelopment. The utility excavation was completed adjacent to former boring B-1. Benzene was identified at an approximate elevation of 69 feet in boring B-1 completed within 9th Avenue in 2002. The utility excavation measured approximately 25 long (northwest to southeast) by 20 feet wide (northeast to southwest) with a maximum depth of approximately 35 feet bgs (approximate Elevation 55 feet). Samples were obtained from approximate elevations ranging between 82 and 57 feet to characterize soil generated during the utility excavation. Gasoline-range hydrocarbons and benzene were detected at concentrations greater than MTCA cleanup levels in samples from east sidewall of the utility excavation (farthest from the subject property boundary). Benzene, diesel- and heavy oil-range hydrocarbons were detected at concentrations less than MTCA cleanup levels in samples from other sidewalls of the utility excavation. Based on the soil chemical data, excavated soil from the ground surface to an approximate depth of 23 feet bgs (Elevation 67 feet) was considered contaminated. Soil below Elevation 67 was considered non-contaminated. The approximate extent of utility excavation and soil sample locations are shown on attached Figure 3.
- **East Boundary of Subject Property**. GeoEngineers obtained soil samples from approximate elevations ranging between 81 and 69 feet from the east property boundary (southeast shoring wall area) during construction excavation activities to evaluate whether MTCA exceeding benzene contamination identified in soil (Elevation 69 feet) at boring B-1 extended onto or was otherwise connected with releases from the subject property. According to the chemical analytical results, benzene was not detected in any of the soil samples. Therefore, benzene contamination is limited to a localized area within 9th Avenue, did not result from a release on the subject property and is not part of the Site. Subsurface conditions at the east property boundary are graphically shown in cross-section C-C′.

Based on the soil sampling and testing results from the utility excavation in 9th Avenue and southeast portion of the subject property, not only was contaminated soil removed from the utility excavation within 9th Avenue, the chemical analytical data and observations made by GeoEngineers demonstrated that the gasoline and benzene contamination identified in 9th Avenue has not sourced from nor migrated to the subject property and either was a localized spill of hydrocarbons within 9th Avenue or originated from an unknown off-property/upgradient source across 9th Avenue.

4.2. Conceptual Site Model

4.2.1. Potential Exposure Pathways

Exposure pathways describe the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at, or originating from a Site [WAC 340-350 (7)(e)(ii)]. The following sections summarize our evaluation of the potential exposure pathways for the subject property. Please note that some of the pathways described in the sections below were evaluated using information obtained during mass excavation which was underway as part property redevelopment/construction.

4.2.1.1. Groundwater to Surface Water

The static groundwater table associated with the regional aquifer was measured in the former monitoring well G-1 on December 27, 2013 and July 1, 2014. The measured depth was approximately 53.3 feet and 55.39 (approximate Elevations 16 and 14 feet, NAVD88) respectively; below local subject property ground surface elevation at monitoring well G-1 (approximately 69 feet, NAVD88). Groundwater was not contaminated based on chemical analytical testing. Additionally, construction excavation was completed to depths of approximately 80 feet bgs (approximate Elevation 7 feet, NAVD88). Also, there is no nearby surface water discharge point for groundwater. Therefore, the groundwater to surface water pathway is not complete at the Site.

4.2.1.2. Soil to Groundwater

The mass excavation area encompassed a few insignificant areas of localized and isolated groundwater (associated with the regional aquifer) which were dewatered/drained as part of the construction excavation and removed from within the subject property boundaries. The static groundwater table associated with the regional aquifer was measured in the former monitoring well G-1 on December 27, 2013 and July 1, 2014. The measured depth was approximately 53.3 feet and 55.39 (approximate Elevations 16 and 14 feet, NAVD88) respectively; below the subject property ground surface (approximate Elevation 69 feet, NAVD88) respectively. Contaminated soil was observed at shallow depths (approximately 1 to 18 feet below subject property ground surface corresponding to Elevations 68 to 51 feet, NAVD88). Additionally, construction excavation was completed to a much greater depth of approximately 80 feet bgs (approximate Elevation 7 feet, NAVD88) as measured from the project-specific ground surface of 9th Avenue (Elevation 87 feet, NAVD88).

A limited volume of soil contamination remains in portions of the Site beyond subject property boundaries beneath a localized section of the Lenora Street sidewalk, and the alley. This soil, although present at the Site is vertically separated from the groundwater table by about 40 feet (from around Elevation 51 to 14 feet, NAVD88). The likelihood of soil to groundwater contaminant migration is very low because of the significant vertical separation of the contaminated soil horizon from the groundwater table, the presence of lower permeability glacially consolidated soils, and the removal of contamination sources (USTs and impacted soil). Also, groundwater samples obtained and tested in April 2014 and July 2015 from monitoring well G-1, screened within the regional aquifer confirm this hypothesis and showed that arsenic, chromium, and lead were present at concentrations less than MTCA Method A cleanup levels and petroleum hydrocarbons were not detected; and September 1993 groundwater sample from an existing off-property monitoring well (MW-5) located across Lenora Street indicated no petroleum detections. As a result, the soil to groundwater pathway is not complete at the Site.

4.2.1.3. Soil Direct Contact

Contaminated soil present at the subject property at approximate elevations ranging between 68 and 51 feet presented a risk to direct contact to construction workers after existing buildings and overlying soil were removed as part of the redevelopment activities. This pathway was eliminated by the construction excavation to approximate Elevation of 10 feet, which included removal of the contaminated soil within the subject property boundaries. The contaminated soil excavation and handling/disposal activities were completed in full accordance with GeoEngineers "9th and Lenora Construction Contingency Plan" dated December 12, 2014 which was submitted to Ecology in December 2014, prior to construction. The limited soil contamination (greater than MTCA Method A Cleanup levels) in portions of the Site that extend beyond the subject property boundaries into localized sections of the Lenora Street sidewalk and the alley will remain capped by the paved surfaces of the rights-of-way; therefore, the soil to direct contact pathway is not complete at the Site.

4.2.1.4. Soil to Vapor Inhalation

Petroleum contaminated soil that existed at the subject property at approximate elevations ranging between 68 and 51 feet prior to construction may have resulted in vapor intrusion risk. This pathway was eliminated by the construction excavation and removal of the contaminated soil at the subject property. The contaminated soil excavation and handling/disposal activities were completed in full accordance with GeoEngineers "9th and Lenora Construction Contingency Plan" dated December 12, 2014 which was submitted to Ecology in December 2014, prior to construction. Excavation to depths of approximate elevation of 7 feet was completed as part of redevelopment activities at the subject property. The planned excavation area encompassed all identified areas of contaminated soil within subject property boundaries. A limited amount of petroleum contaminated soil (a mix of toluene and weathered gasoline-, and heavy oil-range hydrocarbons) in portions of the Site that extend beyond the subject property boundaries into localized sections of the Lenora Street sidewalk and the alley will remain capped by the paved surfaces of the rights-of-way and will not be situated beneath buildings or structures where soil vapor could accumulate; therefore, the soil to vapor inhalation pathway is not complete at the Site.

5.0 FEASIBILITY STUDY

This section summarizes the results of the Feasibility Study (FS) conducted for the subject property. The purpose of the FS is to develop and evaluate alternative cleanup actions for the Site. The FS is in accordance with the Ecology VCP requirements, MTCA and associated implementing regulations (i.e., WAC Chapter 173-340-120(4)(b)).

5.1. Basis for Cleanup Action

This section presents the basis for the cleanup action for the subject property based on current Site conditions. There are three distinct elements that form the basis for the cleanup action: 1) the site-specific cleanup standards and points of compliance, 2) the locations of media requiring cleanup action, and 3) the redevelopment excavation activities for the subject property.

5.1.1. Cleanup Standards

Cleanup standards consist of: 1) cleanup levels that are protective of human health and the environment, and 2) the point of compliance at which the cleanup levels must be met. Cleanup standards adopted for this FS are summarized in Tables A and B.

5.1.1.1. Cleanup Levels

Cleanup levels for soil and groundwater that are protective of human health and the environment and that address the relevant exposure pathways are outlined in this section. MTCA Method A soil and groundwater cleanup levels were adopted based on (a) the simplicity of this cleanup action and the chemicals of concern listed below, (b) the default, most conservative unrestricted use scenario, and (c) the protection of construction and excavation workers in a direct contact scenario. The direct contact scenario for construction and excavation workers was addressed by removal of contaminated soil in accordance with GeoEngineers "9th and Lenora Construction Contingency Plan" dated December 12, 2014 which was submitted to Ecology in December 2014, prior to construction.

TABLE A. OVERVIEW OF SOIL CLEANUP STANDARDS

Constituent	Cleanup Level for Soil Milligrams per kilogram (mg/kg)
Primary Chemicals of Concern	
Diesel-Range Hydrocarbons	2,000
Heavy Oil-Range Hydrocarbons	2,000
Total Naphthalenes	5
Total cPAHs	100,000
Secondary Chemicals of Concern	
Gasoline-Range Hydrocarbons	30/100
Benzene	0.03
Toluene	7
Total Xylenes	9
Lead	250
Point of Compliance based on MTCA	*Throughout the Soil Column*

Notes:

Cleanup level for gasoline-range petroleum hydrocarbons is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.

TABLE B. OVERVIEW OF GROUNDWATER CLEANUP STANDARDS

Constituent	Cleanup Level for Groundwater Micrograms per liter (µg/L)
Gasoline-Range Hydrocarbons	800
Diesel-Range Hydrocarbons	500
Heavy Oil-Range Hydrocarbons	500
Benzene	5
Toluene	700
Ethylbenzene	1,000
Xylenes	1,000

Constituent	Cleanup Level for Groundwater
	Micrograms per liter (µg/L)
Arsenic	5
Total Chromium	50
Lead	15
Mercury	2
Point of Compliance based on MTCA	*At regional water table*

5.1.1.2. Points of Compliance

Under MTCA, the point of compliance is the point or location on a site where the cleanup levels must be attained. The standard point of compliance for the proposed human health based-direct contact soil cleanup levels outlined in Table A is throughout the soil column. The direct contact point of compliance is a depth of 15 feet bgs. For this project, the MTCA direct contact point of compliance depth of 15 feet is measured from the subject property ground surface (approximate Elevation 69 feet, NAVD88). Contaminated soil was identified from approximately 1 to 18 feet below subject property ground surface (approximate Elevations 68 to 51 feet, NAVD88), based on chemical concentrations observed during the remedial investigations and construction excavation. The MTCA Method A cleanup levels chosen for this site are based on protection of groundwater and/or direct contact developed for unrestricted land use. The point of compliance for groundwater is throughout the Site at the regional water table. However, because groundwater was shown to be deep (55 feet below subject property ground surface; Elevation 14 feet, NAVD88), and had a separation of about 40 feet between identified soil contamination and the groundwater table, the soil to groundwater pathway was shown to not be complete for this site. Nevertheless, construction excavation (base of excavation approximate Elevation 10 feet, NAVD88) extended below the documented soil contamination (approximate Elevation 51 feet, NAVD88) and all of the contaminated soil was removed from within the bounds of the property. Therefore, both the direct contact and soil to groundwater points of compliance were achieved at the property as a result of this cleanup action.

5.1.2. Cleanup Action Evaluation

Based on the results of RI activities performed at the Site (summarized in Section 4.0), soil primarily contaminated with petroleum hydrocarbons, PAHs and to a lesser extent with gasoline-range hydrocarbons, benzene, xylenes, (associated with the USTs) and/or lead (observed at two locations in fill soil) at concentrations exceeding cleanup levels needed remediation to achieve protection of human health and the environment. There were two approaches to remediation at this Site:

1. Excavation within the bounds of the subject property, and
2. Engineering and institutional controls off-property.

Subject Property. The construction excavation at the subject property consisted of excavation of the entire subject property to approximately 80 feet bgs (approximate Elevation 7 feet) which resulted in removal of all contaminated soil from the subject property. The redevelopment excavation encompassed all of the soil contamination within subject property; therefore, the cleanup actions for the subject property consisted of remedial excavation and off-site permitted disposal of contaminated soil. Due to the extent of the redevelopment excavation, and because contamination was not documented in groundwater beneath the

subject property at concentrations exceeding MTCA Method A Cleanup levels and the lack of other pathways of concern, evaluation of additional cleanup action alternatives were not necessary in this FS for the subject property.

Site/Off-Property. A limited volume of Petroleum (gasoline- and heavy oil-range hydrocarbons) and PAHs-contaminated soil remains in two small areas; the first extending beyond the south subject property boundary beneath the Lenora Street sidewalk and the second extending beyond the west subject property beneath the alley. This residual contaminated soil cannot be removed because:

- **Lenora Street.** Contaminated soil is located approximately 24 feet deep (in Lenora Street) which requires significant shoring for excavation, a multitude of utilities are present, and closure of Lenora Street will have a significant adverse impact on downtown traffic that would likely not be permitted by City of Seattle Department of Transportation (SDOT).
- **Alley.** Presence of infrastructure elements in the alley associated with the triangular parcel shoring wall and an underground parking garage structural and foundation elements (concrete footings and walls) that also supports the Lenora Street stability.

For both Lenora Street and the alley, these infrastructure elements cannot be demolished to access a limited volume of the contaminated soil as it will undermine the structural integrity of nearby improvements including the City ROWs. Also, the contaminated soil will remain capped by asphalt/concrete paved sidewalks, streets and/or alleys. Therefore, evaluation of additional cleanup action alternatives for remaining Site areas was not necessary for this FS.

This conclusion complies with WAC 173-340-360 related to Selection of Cleanup Actions. Additionally, our cleanup action evaluation for the Site included a disproportionate cost analysis (DCA) which evaluated whether a cleanup action uses permanent solutions to the maximum extent practicable relative to the "threshold requirements" and "other requirements" under MTCA. Our DCA analysis shows that the cost to conduct additional excavation (or any in-situ remediation) into the Lenora Street and alley (rights-of-way) would result in disproportionate cost for the marginal environmental benefit return. The details of DCA area discussed in later sections (Section 5.2.3) of this report.

5.1.3. Development and Description of Cleanup Action Alternatives

As stated in the previous section, because construction excavation resulted in the removal of all contaminated soil within the bounds of the subject property and groundwater was not contaminated, no additional cleanup action alternatives were evaluated for the subject property. However, in this section, cleanup action alternatives to address remaining contamination at the Site (in the Lenora Street and the alley) are developed through a process of screening applicable remediation technologies and assembling the technologies into a set of cleanup action alternatives. We evaluated three alternatives for remediating contaminated soil with MTCA Method A cleanup levels within the alley and Lenora Street.

1. Alternative 1 – Institutional and Engineering Controls
2. Alternative 2 – Remedial Excavation
3. Alternative 3 – Chemical Oxidation In-Situ Remediation

Alternative 1 (Institutional and Engineering Controls through capping) will be shown to be the preferred remedy through the analysis in the following sections, Tables 6 and 7, and because of the results of a Disproportionate Cost Analysis as outlined in Section 5.2.3.

5.2. Cleanup Action Evaluation Criteria

This section presents a description of the threshold and other requirements for cleanup actions under MTCA and the additional criteria used in this FS to evaluate the cleanup action alternatives.

5.2.1. Threshold Requirements

Cleanup actions performed under MTCA must comply with several basic requirements. Cleanup action alternatives that do not comply with these criteria are not considered MTCA-compliant cleanup actions. As provided in WAC 173-340-360(2)(a), the four threshold requirements for cleanup actions are:

- Protection of human health and the environment;
- Compliance with cleanup standards (see WAC 173-340-700 through 173-340-760);
- Compliance with applicable state and federal laws (see WAC 173-340-710); and
- Provision for compliance monitoring (see WAC 173-340-410 and 173-340-720 through 173-340-760).

5.2.1.1. Protection of Human Health and the Environment

The results of cleanup actions performed under MTCA must ensure that both human health and the environment are protected.

5.2.1.2. Compliance with Cleanup Standards

Compliance with cleanup standards requires, in part, that cleanup levels are met at the applicable points of compliance. If a remedial action does not comply with cleanup standards, the remedial action is an interim action, not a cleanup action. When a cleanup action involves containment of soils with hazardous substance concentrations exceeding cleanup levels at the point of compliance, the cleanup action may be determined to comply with cleanup standards, provided the requirements specified in WAC 173-340-740(6)(f) are met. Our cleanup action evaluation for the Site included a DCA which evaluated whether a cleanup action uses permanent solutions to the maximum extent practicable.

5.2.1.3. Compliance with Applicable State and Federal Laws

Cleanup actions conducted under MTCA must comply with applicable state and federal laws. The term "applicable state and federal laws" includes legally applicable requirements and those requirements that Ecology determines to be relevant and appropriate as described in WAC 173-340-710. A list of site specific Applicable or Relevant and Appropriate Requirements (ARARs) is presented in attached Table 6.

5.2.1.4. Provision for Compliance Monitoring

The cleanup action must allow for compliance monitoring in accordance with WAC 173-340-410. Compliance monitoring consists of protection monitoring, performance monitoring and confirmational monitoring. Protection monitoring is conducted to confirm that human health and the environment are adequately protected during construction and the operation and maintenance period of a cleanup action. Performance monitoring is conducted to confirm that the cleanup action has attained cleanup standards and, if appropriate, remediation levels or other performance standards. Confirmational monitoring (groundwater and/or soil) is conducted to confirm the long-term effectiveness of the cleanup action once cleanup standards and, if appropriate, remediation levels or other performance standards have been

attained. Groundwater is not a media of concern because representative groundwater from well G-1 was tested and no contaminants of concern were identified before remedial action was conducted so groundwater compliance monitoring is not required.

5.2.2. Other MTCA Requirements

Under MTCA, when selecting from the alternatives that meet the minimum requirements described above, the alternatives shall be further evaluated against the following additional criteria. Table 7 provides the detail behind each of the three remedial alternatives screened against these "Other MTCA Requirements." Each of the alternatives and compliance criteria are scored against one another to establish the benefits and/or disadvantages of one alternative over another.

- **Use permanent solutions to the maximum extent practicable** [WAC 173-340-360(2)(b)(i)]. MTCA requires that when selecting from cleanup action alternatives that fulfill the threshold requirements, the selected action shall use permanent solutions to the maximum extent practicable [WAC 173-340-360(2)(b)(i)]. MTCA specifies that the permanence of these qualifying alternatives shall be evaluated by balancing the costs and benefits of each of the alternatives using a "disproportionate cost analysis" in accordance with WAC 173-340-360(3)(e). The criteria for conducting this analysis are described in Section 5.2.3 below.
- **Provide a reasonable restoration time frame** [WAC 173-340-360(2)(b)(ii)]. In accordance with WAC 173-340-360(2)(b)(ii), MTCA places a preference on those cleanup action alternatives that, while equivalent in other respects, can be implemented in a shorter period of time. MTCA includes a summary of factors to be considered in evaluating whether a cleanup action provides for a reasonable restoration time frame [WAC 173-340-360(4)(b)].
- **Consideration of Public Concerns**. For VCP sites, there is no direct opportunity for the public to comment on planned cleanup actions. However, information is available to the public through Ecology's Site Register, and the public could comment on any planned actions. In addition, the redevelopment was subject to a full State Environmental Policy Act (SEPA) process review. In addition, Ninth and Lenora LLC has been working with the City since the inception and entire design of the project. Discussions are ongoing with the City regarding future use of the City-owned triangular parcel as a public park.

5.2.3. MTCA Disproportionate Cost Analysis

The MTCA disproportionate cost analysis (DCA) is used to evaluate which of the alternatives that meet the threshold requirements are permanent to the maximum extent practicable. This analysis involves comparing the costs and benefits of alternatives and selecting the alternative with incremental costs that are not disproportionate to the incremental benefits. The evaluation criteria for the disproportionate cost analysis are specified in WAC 173-340-360(2) and WAC 173 340-360(3), and include protectiveness, permanence, cost, long-term effectiveness, management of short-term risks, implementability and consideration of public concerns.

Redevelopment excavation resulted in remedial excavation of known contaminated media at the subject property. Based on the extent of the construction excavation, additional cleanup action alternatives were not considered necessary for the subject property because all cleanup standards were met. A limited volume of weathered petroleum (gasoline- and heavy oil-range hydrocarbons) and PAH-contaminated soil remaining in areas of the Site extending beyond the subject property boundaries at depth under Lenora

Street and the alley cannot be removed as outlined in Section 5.1.2. A MTCA DCA was performed to evaluate the three remedial alternatives (capping, excavation, in-situ remediation) for soil remaining in areas of the Site extending beyond the subject property boundaries into the rights-of-way (Lenora Street sidewalk and alley).

As outlined in WAC 173-340-360(3)(e), MTCA provides a methodology that uses the criteria below to determine whether the costs associated with each cleanup alternative are disproportionate relative to the incremental benefit of the alternative above the next lowest-cost alternative. The comparison of benefits relative to costs may be quantitative, but will often be qualitative. Costs are disproportionate to benefits if the incremental costs of the more permanent alternative exceed the incremental degree of benefits achieved by the other lower-cost alternative [WAC-173-340-360(e)(i)]. Where two or more alternatives are equal in benefits, Ecology selects the less costly alternative [WAC 173-340-360(e)(ii)(c)].

Our DCA analysis shows that the cost to conduct additional excavation (or any in-situ remediation) beneath Lenora Street and the alley (rights-of-way) would result in disproportionate cost for the marginal environmental benefit. Each of the MTCA criteria used in the DCA is described below. The DCA evaluation is outlined in Table 7.

5.2.3.1. Protectiveness

The overall protectiveness of a cleanup action alternative is evaluated based on several factors. First, the extent to which human health and the environment are protected and the degree to which overall risk at a site is reduced are considered. Both on-site and off-site risk reduction resulting from implementing the alternative are considered. Excavation is the most protective with capping and in-situ remediation having equivalent protectiveness.

5.2.3.2. Permanence

MTCA specifies that when selecting a cleanup action alternative, preference shall be given to actions that are "permanent solutions to the maximum extent practicable." Evaluation criteria include the degree to which the alternative permanently reduces the toxicity, mobility or mass of hazardous substances; the effectiveness of the alternative in destroying the hazardous substances; the reduction or elimination of hazardous substance releases and sources of releases; the degree of irreversibility of waste treatment processes; and the characteristics and quantity of treatment residuals generated. Excavation is the most permanent with in-situ remediation being slightly more permanent than capping.

5.2.3.3. Cost

The analysis of cleanup action alternative costs under MTCA includes all costs associated with implementing an alternative including design, construction, long-term monitoring and institutional controls. Costs are intended to be comparable among different alternatives to assist in the overall analysis of relative costs and benefits of the alternatives. The costs to implement an alternative include the cost of construction, the net present value of any long-term costs and agency oversight costs. Long-term costs include operation and maintenance costs, monitoring costs, equipment replacement costs and the cost of maintaining institutional controls. Unit costs used to develop overall remediation costs for this FS were derived using a combination of published engineering reference manuals (i.e., R.S. Means); construction cost estimates solicited from applicable vendors and contractors; a review of actual costs incurred during similar applicable projects; and professional judgment. Capping is the least costly with excavation and in-situ remediation having similar costs (over an order of magnitude higher than capping).

5.2.3.4. Long-Term Effectiveness

Long-term effectiveness is a parameter that expresses the degree of certainty that the alternative will be successful in maintaining compliance with cleanup standards over the long-term performance of the cleanup action. The MTCA regulations contain a specific preference ranking for different types of technologies that will be considered as part of the comparative analysis. The ranking places the highest preference on technologies such as reuse/recycling, treatment, immobilization/solidification, and disposal in an engineered, lined, and monitored facility. Lower preference rankings are applied for technologies such as on-site isolation/containment with attendant engineered controls, and institutional controls and monitoring. Excavation has the highest long-term effectiveness with in-situ remediation being slightly more effective than capping.

5.2.3.5. Management of Short-term Risks

Evaluation of this criterion considers the relative magnitude and complexity of actions required to maintain protection of human health and the environment during implementation of the cleanup action. Cleanup actions carry short-term risks such as potential mobilization of contaminants during construction or safety risks typical of large construction projects. Some short-term risks can be managed through best practices during project design and construction, while other risks are inherent to project alternatives and can offset the long-term benefits of an alternative. All three alternatives are similar in their short term risks.

5.2.3.6. Implementability

Implementability is an overall metric expressing the relative difficulty and uncertainty of implementing the cleanup action. Evaluation of implementability includes consideration of technical factors such as the availability of mature technologies and experienced contractors to accomplish the cleanup work. It also includes administrative factors associated with permitting and completing the cleanup. Capping is the most implementable with excavation and in-situ remediation being very difficult to implement in rights-of-way because the limited volume of weathered petroleum (gasoline- and heavy oil-range hydrocarbons) and PAH-contaminated soil remaining in areas of the Site extending beyond the subject property boundaries at depth under Lenora Street and the alley cannot be removed as outlined in Section 5.1.2. Excavation and in-situ remediation are anticipated to have over an order of magnitude higher complexity than capping.

5.2.4. Consideration of Public Concerns

For VCP sites, there is no direct opportunity for the public to comment on planned cleanup actions. However, information is available to the public through Ecology's Site Register and the public could comment on any planned actions. All three alternatives are similar related to public concerns. Ninth and Lenora LLC has been working with the City since the inception and entire design of the project. Discussions are ongoing with the City regarding future use of the City-owned triangular parcel as a public park.

5.3. Evaluation of Cleanup Action

5.3.1. On-Property Cleanup Action

All contaminated soil was removed from within the bounds of the subject property and no further action is warranted per the minimum requirements for cleanup actions (WAC 173-340-360(2)(a)(b)).

5.3.2. Off-Property Cleanup Action – Alternatives Analysis Summary

Contaminated soil remains in rights-of-way (petroleum and/or PAHs-contaminated soil beneath Lenora Street sidewalk and alley). Three alternatives were considered for remedial action of remaining

contaminated soil beneath rights-of-way: (1) capping, (2) excavation, (3) in-situ chemical oxidation treatment (see Table 7 [evaluation of alternatives] and 8 [alternative rankings] for description of the cleanup alternatives).

Neither remedial excavation nor in-situ treatment were practicable to remediate remaining contaminated soil beneath rights-of-way. Utilities, city infrastructure and heavy traffic make excavation and/or the installation of any treatment systems within the rights-of-way impracticable.

Additionally, the cost to implement an in-situ cleanup system and/or to remove soil is disproportionate to its environmental benefit and evaluated in the MTCA DCA in Section 5.2.3. Contaminated soil in the rights-of-way remains capped by pavement and is situated well above the deep regional groundwater table beneath the Site. GeoEngineers proposes (1) development of an Environmental Covenant in accordance with WAC 173-340-440, with institutional controls that restrict future use and activities in the areas of Lenora Street, and the public alley rights-of-way where residual soil contamination remains in place. The remaining contaminated soil meets the minimum requirements for a cleanup action per Section 173-340-360(2) and the remaining contaminated soil is capped beneath pavement restricting direct contact with contaminated soil. Therefore, the combination of this remedy (capping) and institutional controls is permanent and meets the intent of Section 173-340-440(6) (regarding primary reliance on institutional controls).

5.4. MTCA Disproportionate Cost Analysis

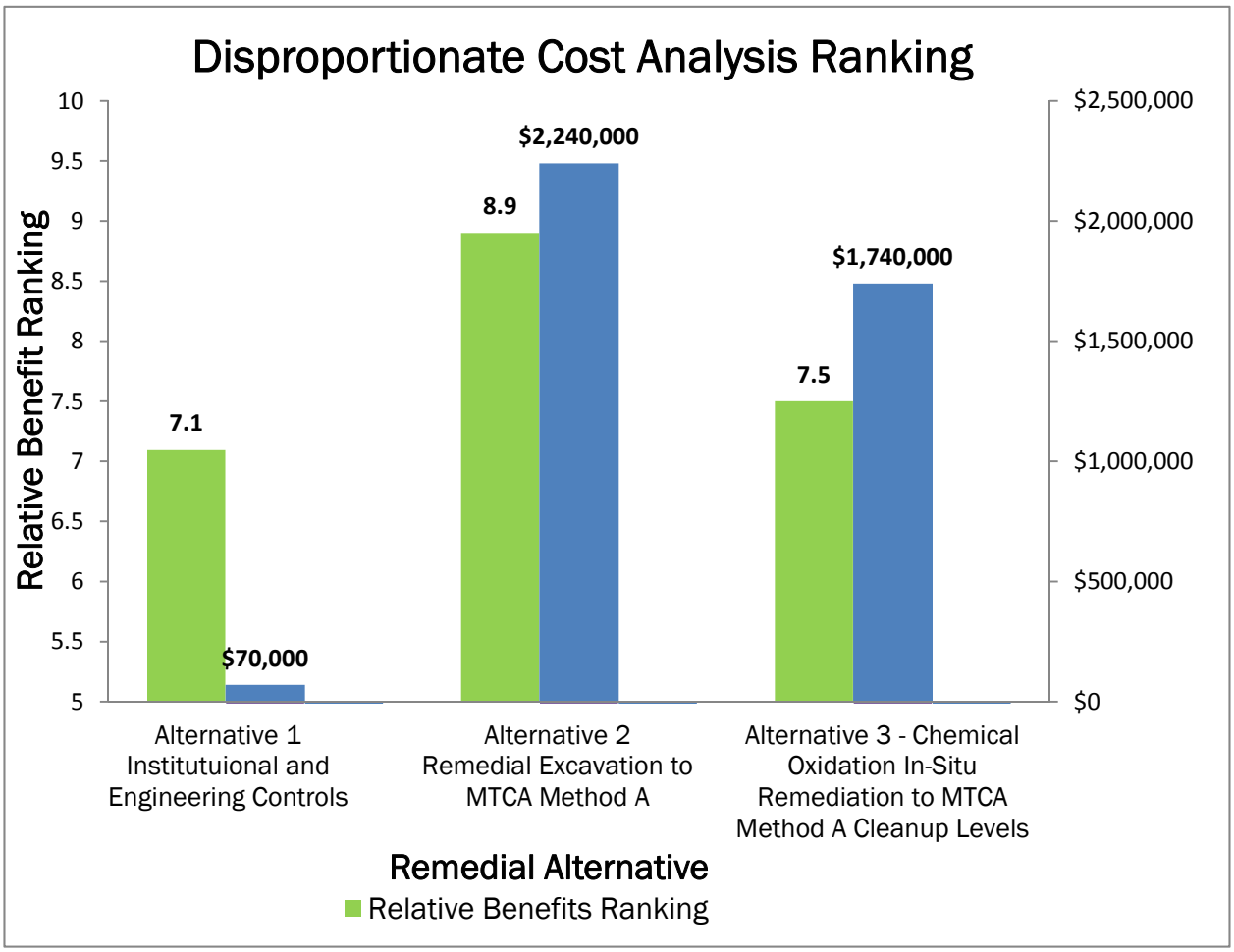
A MTCA DCA is used to determine if a cleanup alternative is permanent to the maximum extent practicable and meets the criteria in WAC 173-340-360(F)(i – vii) and discussed in Section 5.2.3.

The remedial Alternatives (capping, excavation, in-situ chemical oxidation treatment) were evaluated based on the relative benefits ranking factors of the DCA. Using a numeric scoring scale of 1 (lowest) to 10 (highest) and the methodology described above in Section 5.2.3 and in Table 7, each individual criterion is evaluated based on how it applies to each alternative. Costs for the remedial alternatives are based on similar projects GeoEngineers has performed as well as cost estimates provided by a qualified contractor. A cost analysis for each Alternative is presented in the Remedial Excavation Scenarios – Cost Estimates, dated December 28, 2015, attached in Appendix C. Table 7 presents the results of this analysis, including the total scores for each alternative and the determination of disproportionate cost.

All of the alternatives developed in this FS for off-property, remaining contaminated soil meet each of the four MTCA threshold requirements described for cleanup actions: protection of human health and the environment, compliance with cleanup standards, compliance with applicable state and federal regulations and provision for compliance monitoring.

- Alternative 1 (Capping) is the most practicable and implementable remedial alternative. It does not remove any of the residual contaminated soil (no additional source removal). Engineering and institutional controls are utilized to protect human health and the environment (i.e. the cap prevents human direct contact of contaminated soil and groundwater).
- Alternative 2 (Excavation) is the most invasive and difficult to implement. It utilizes soil removal, resulting in removal of soil exceeding the most restrictive cleanup levels (MTCA Method A) throughout the site. Alternative 2 is thus the most permanent solution and forms the baseline cleanup action alternative [WAC 173-340350(8)(c)(ii)(A) and 173-340-360(3)(e)(ii)(B)].

- Alternative 3 (In-Situ Treatment) is a more permanent solution than Alternative 1, because injection of chemical oxidation products increase the breakdown of petroleum contaminated soil exceeding the site-specific MTCA Method A cleanup levels, rather than maintaining the existing "cap" and implementing institutional controls. However, this remedial approach is not implementable. Injection is a very invasive and difficult remedy to implement because of: (1) the logistical factors outlined in Section 5.1.2 and (2) the presence of highly consolidated glacial soils have very poor radius of influence for chemical injection, and (3) the likely damage to subsurface utilities present in Lenora Street due to corrosive injections.



Based on the relative benefits ranking element of the DCA, the highest ranking, yet very costly and difficult to implement, cleanup action alternative is Alternative 2 (excavation). The high relative benefits rankings of Alternatives 2 (excavation) and 3 (in-situ remediation) compared to Alternative 1 (capping) are largely due to the contaminant mass removal achieved through removal or treatment of soil. However, because of the much higher incremental cost for Alternatives 2 and 3 (higher costs associated with permitting, design, and implementation costs relative to a small amount of contaminated soil to be removed), the costs associated with Alternatives 2 and 3 were determined to be disproportionate to the increased level of permanence achieved relative to Alternative 1. As a result, Alternative 1 emerges as the recommended alternative even though it had a slightly lower ranking when compared to the ranking of Alternatives 2 or 3.

5.5. Preferred Remedial Alternative

Based on the DCA, remedial Alternative 1 – Capping (Institutional and Engineering Controls) is the preferred alternative for residual off-property impacted soil because it meets the minimum thresholds and other requirements as follows:

- **Uses permanent solutions to the maximum extent practicable** [WAC 173-340-360(2)(b)(i)] as demonstrated by the disproportionate cost analysis.
- **Provides a reasonable restoration time frame** [WAC 173-340-360(2)(b)(ii)]. The cap(s) already exist as paved sidewalks and/or city streets or alleys.
- **Considers Public Concerns**. For VCP sites, there is no direct opportunity for the public to comment on planned cleanup actions. However, information is available to the public through Ecology's Site Register, and the public could comment on any planned actions. In addition, significant coordination with the City of Seattle is ongoing as a part of the redevelopment process.

Although Alternatives 2 and 3 provide a higher degree of permanence, they do so at a much higher cost (more than 10 to 11 times higher) than Alternative 1, without a proportional incremental increase in environmental benefits. Although a limited volume of weathered petroleum contaminants are left in place above the most restrictive MTCA Method A cleanup levels with Alternative 1, exposure to these contaminants is very unlikely because this contamination is capped by a city sidewalk, significant utilities and street improvements in downtown Seattle. In addition, Alternatives 2 and 3 are not implementable.

6.0 CONCLUSIONS

The Remedial Investigation completed for the site documented the presence of point source petroleum-contaminated soil around USTs located in the southwest corner of the property. This contamination extended off-property into the Lenora Street and adjacent alley (rights-of-way). Soil primarily contaminated with petroleum hydrocarbons, PAHs and to a lesser extent with gasoline-range hydrocarbons, benzene, xylenes, (associated with the USTs) and/or lead (observed at only two locations in fill soil) was identified on the subject property to depths ranging from approximately 1 to 18 feet below local subject property ground surface. The data obtained as part of the RI demonstrated that groundwater beneath the Site was (a) observed at depths of approximately 53.3 and 55.39 feet below subject property ground surface (approximate Elevations 16 and 14 feet NAVD88), in former monitoring well G-1 and (b) groundwater samples obtained in April 2014 and July 2015 from the regional aquifer (former G-1) indicated that metals (arsenic, chromium, and lead) were present at concentrations less than MTCA Method A cleanup levels and petroleum hydrocarbons were non-detect, respectively. Additionally, a September 1993 groundwater sample from an existing monitoring well MW-5 installed by GeoEngineers located across Lenora Street indicated no petroleum impacts. Therefore, groundwater is not a media of concern at the Site.

Based on this RI/FS, the selected remedy was remedial excavation and off-property permitted disposal for all areas of the subject property. The selected remedy dovetailed with property redevelopment. Some of the data collected during the RI/FS occurred before and during remedial excavation which provided a benefit to capture and report on unknowns discovered during property redevelopment in both this RI/FS report and a companion Cleanup Action Report (both reports will be submitted to Ecology as part of a Voluntary Cleanup Program submittal). Redevelopment activities at the subject property included excavation to a depth of approximately 80 feet bgs (approximate Elevation 7 feet). As a result, all

contaminated soil identified at the subject property was removed as part of the redevelopment excavation. The cleanup action at the subject property also included decommissioning of existing monitoring wells and removal of closed-in-place USTs at the subject property.

During the concurrent construction and remedial excavation, it was not practicable to excavate contaminated soil extending beyond the subject property boundaries. A limited volume of weathered petroleum (gasoline- and heavy oil-range hydrocarbons) and PAH-contaminated soil remains in two small areas; the first extending beyond the south subject property boundary at depth under Lenora Street and the second extending beyond the west subject property beneath the alley. This residual contaminated soil cannot be removed because:

- **Lenora Street.** Contaminated soil is located approximately 24 feet deep (in Lenora Street) which would require significant shoring for excavation, a multitude of utilities are present, and closure of Lenora Street would have an adverse impact on downtown traffic.
- **Alley.** Presence of infrastructure elements in the alley associated with the triangular parcel shoring wall and an underground parking garage structural and foundation elements (concrete footings and walls) that also supports the Lenora Street stability prevent excavation and removal of the impacted soil.

For both Lenora Street and the alley, these infrastructure elements cannot be demolished to access a limited volume of the contaminated soil as it will undermine the structural integrity of nearby improvements. Also, the contaminated soil will remain capped by asphalt/concrete paved sidewalks, streets and/or alleys. Therefore, additional cleanup action alternatives for remaining Site areas was not implementable.

As described in this FS the small volume of residual contaminated soil that remains off-property in rights-of-way does not pose a threat to human health or the environment and could not practicably be removed due to significant infrastructure in heavily trafficked downtown Seattle, without expending disproportionate cost for commensurate environmental benefit. Additional remedial alternatives were evaluated and a disproportionate cost analysis conducted to demonstrate that capping contaminated soil in the rights-of-way was an appropriate, cost effective and permanent to the maximum extent practicable remedy as required by MTCA. Our DCA analysis shows that the cost to conduct additional excavation (or any in-situ remediation) into the Lenora Street and alley (rights-of-way) would result in highly disproportionate cost for the environmental benefit. Contaminated soil that remains capped in these areas by the rights-of-way pavement is vertically separated from the underlying regional groundwater by more than 40 feet beneath the Site. GeoEngineers proposes recordation of an Environmental Covenant in accordance with WAC 173-340-440, with institutional controls that restrict future use and activities in the areas of Lenora Street sidewalk and alley (rights-of-way) where residual soil contamination remains capped. The selected remedial alternative (capping) of remaining limited contaminated soil in rights-of-way meets the minimum thresholds and other requirements of MTCA and does not rely primarily on institutional controls within the Site as a whole.

The objective of the cleanup actions evaluated by the RI/FS at the Site is to obtain a written determination issued by Ecology stating that no further remedial action is necessary at the subject property (a property-specific NFA Determination).

7.0 REFERENCES

GeoEngineers, 2014 (d). "Construction Contingency Plan – Contaminated Soil and Groundwater Management, 9th and Lenora Development, 2118 Westlake Avenue/2101 9th Avenue, Seattle, Washington" dated December 12, 2014.

GeoEngineers, 2015. "Cleanup Action Report, 9th and Lenora Development, Seattle, Washington" dated December 28, 2015.

TABLES

GeoEngineers

Table 1

Soil Field Screening and Chemical Analytical Data[1]
BETX, Petroleum Hydrocarbons, and Metals

Ninth Avenue and Lenora Street

Seattle, Washington

Exploration Location[2]	Approximate Surface Elevation[3] (feet)	Sample Identification	Sample Depth (feet bgs)	Approximate Sample Elevation (feet)	Field Screening[4]		BETX[5] (mg/kg)				Petroleum Hydrocarbons (mg/kg)			Total Metals[8] (mg/kg)							
					Sheen	Headspace Vapor (ppm)	Benzene	Ethyl benzene	Toluene	Total Xylenes	Gasoline Range[6]	Diesel Range[7]	Heavy Oil Range[7]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
September 2014 Explorations[9]																					
DP-1	69	DP-1-4.0	4.0	65.0	MS	<1	--	--	--	--	--	**250**	**1,500**	<11	--	<1.1	**35**	30	<0.56	--	--
		DP-1-8.0	8.0	61.0	SS	<1	--	--	--	--	--	<29	<59	<12	--	<0.59	**70**	<5.9	<0.29	--	--
		DP-1-14.0	14.0	55.0	NS	<1	--	--	--	--	--	<32	<65	--	--	--	--	--	--	--	--
		DP-1-20.0	20.0	49.0	NS	<1	--	--	--	--	--	<28	<58	--	--	--	--	--	--	--	--
DP-2	69	DP-2-4.0	4.0	65.0	SS	<1	--	--	--	--	--	**380**	**1,900**	<11	--	<1.1	**28**	**22**	<0.53	**--**	--
		DP-2-8.0	8.0	61.0	MS	<1	--	--	--	--	--	**2,900**	**15,000**	<13	--	<0.63	**52**	**22**	<0.31	**--**	--
		DP-2-14.0	14.0	55.0	NS	<1	--	--	--	--	--	<33	<65	--	--	--	--	--	--	--	--
DP-3	85	DP-3-20.0	20.0	65.0	NS	<1	<0.020	<0.054	<0.054	<0.108	**10**	<28	<56	--	--	--	--	--	--	--	--
		DP-3-24.0	24.0	61.0	NS	<1	<0.020	<0.063	<0.063	<0.126	<6.3	<30	<60	--	--	--	--	--	--	--	--
		DP-3-28.0	28.0	57.0	NS	<1	<0.020	<0.072	<0.072	<0.144	<7.2	<33	<66	--	--	--	--	--	--	--	--
DP-4	86	DP-4-4.0	4.0	82.0	NS	<1	--	--	--	--	--	<27	<54	--	--	--	--	--	--	--	--
		DP-4-20.0	20.0	66.0	NS	<1	<0.020	<0.061	<0.061	<0.122	<6.1	<28	<55	--	--	--	--	--	--	--	--
		DP-4-24.0	24.0	62.0	NS	<1	<0.020	<0.063	<0.063	<0.126	<6.3	<31	<62	--	--	--	--	--	--	--	--
		DP-4-28.0	28.0	58.0	NS	<1	<0.020	<0.066	<0.066	<0.132	<6.6	<32	<63	--	--	--	--	--	--	--	--
DP-5	86	DP-5-2.0	2.0	84.0	NS	<1	--	--	--	--	--	<27	**580**	--	--	--	--	--	--	--	--
		DP-5-22.0	22.0	64.0	NS	<1	<0.020	<0.059	<0.059	<0.118	<5.9	<29	<59	--	--	--	--	--	--	--	--
		DP-5-24.0	24.0	62.0	NS	<1	<0.020	<0.059	<0.059	<0.118	<5.9	<29	<58	--	--	--	--	--	--	--	--
		DP-5-28.0	28.0	58.0	NS	<1	<0.020	<0.068	<0.068	<0.136	<6.8	<30	<61	--		--	--	--	--	--	--
July 2013 Explorations[10]																					
MW-01	70	MW-01-3.0	3.0	67.0	SS	<1	<0.0250	<0.0375	**0.0319**	<0.025	<6.25	<22.2	<55.5	**4.02**	--	<0.179	**36.9**	**25.8**	<0.286	**--**	--
GEI-7	69	GEI-7-4.0	4.0	65.0	SS	<1	<0.0237	<0.0356	<0.0237	<0.0237	<5.93	<21.1	<52.9	**2.59**	--	<0.183	**30.4**	**10.5**	<0.292	**--**	--
		GEI-7-6.0	6.0	63.0	NS	<1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GEI-8	69	GEI-8-1.0	1.0	68.0	SS	<1	<0.0190	<0.0286	<0.0190	<0.0190	<4.76	<20.7	**789**	**6.42**	--	**1.43**	**39.6**	**375**	<0.263	**--**	--
		GEI-8-7.0	7.0	62.0	NS	<1	--	--	--	--	--	--	--	--	--	--	--	**6.17**	--	**--**	--
MTCA Method A or B Cleanup Level for Unrestricted Land Use							0.03	6	7	9	30/100[17]	2,000	2,000	20	16,000[18]	2	2,000[19]	250	2	400[18]	400[18]
Natural Background Soil Metals Concentrations in the Puget Sound[20]							--	--	--	--	--	--	--	7	ne	1	48	24	0.07	ne	ne

Exploration Location[2]	Approximate Surface Elevation[3] (feet)	Sample Identification	Sample Depth (feet bgs)	Approximate Sample Elevation (feet)	Field Screening[4]		BETX[5] (mg/kg)				Petroleum Hydrocarbons (mg/kg)			Total Metals[8] (mg/kg)							
					Sheen	Headspace (ppm)	Benzene	Ethyl benzene	Toluene	Total Xylenes	Gasoline Range[6]	Diesel Range[7]	Heavy Oil Range[7]	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver
December 2013 Explorations[9]																					
E-1	70	E-1-5-12.5	12.5	57.5	SS	<1	<0.020	<0.072	<0.072	<0.072	<7.2	<32	<64	<13	--	<0.64	**58**	<6.4	<0.32	--	--
E-2	70	E-2-1-2.5	2.5	67.5	NS	<1	<0.020	<0.059	<0.059	<0.059	<5.9	**34**	**150**	<11	--	<0.57	**38**	**28**	<0.28	--	--
G-1	70	G-1-2-10.0	10.0	60.0	SS	<1	<0.020	<0.057	<0.057	<0.057	<5.7	<33	**67**	<11	--	<0.55	**42**	<5.5	<0.28	--	--
G-2	70	G-2-2-5.0	5.0	65.0	NS	<1	<0.020	<0.078	<0.078	<0.078	<7.8	<28	<55	<13	--	<0.66	**48**	**17**	<0.33	--	--
July 2007 Explorations[11]																					
GEI-1	67	GEI-1-4	4.0	63.0	NS	<1	--	--	--	--	<20	<50	<100	--	--	--	--	--	--	--	--
		GEI-1-12	12.0	55.0	NS	<1	--	--	--	--	<20	<50	<100	--	--	--	--	--	--	--	--
GEI-2	67	GEI-2-4	4.0	63.0	SS	<1	<0.01	<0.01	<0.01	<0.01	<20	**310**	**1,100**	<5	**720**	**3.6**	**26**	**1,200**	**0.31**	<5	<5
		GEI-2-10	10.0	57.0	NS	<1	--	--	--	--	<20	<50	<100	--	--	--	--	--	--	--	--
GEI-3	67	GEI-3-8.0	8.0	59.0	NS	<1	--	--	--	--	<20	<50	<100	--	--	--	--	--	--	--	--
GEI-4	67	GEI-4-5.0	5.0	62.0	NS	<1	--	--	--	--	<20	<50	<100	--	--	--	--	--	--	--	--
GEI-5	69	GEI-5-6	6.0	63.0	NS	<1	<0.01	<0.01	<0.01	<0.01	<20	<50	<100	<5	**53**	<1	**31**	<5	<0.02	<5	<5
GEI-6	69	GEI-6-4	4.0	65.0	NS	<1	--	--	--	--	<20	<50	<100	--	--	--	--	--	--	--	--
August 2002 Explorations[11]																					
B-1	87	B-1-18.0	18.0	69.0	MS	<100	**0.23**	<0.05	<0.05	<0.2	<3	**120**	**310**	--	--	--	--	--	--	--	--
		B-1-24.0	24.0	63.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	<50	--	--	--	--	--	--	--	--
B-2	86	B-2-24.0	24.0	62.0	HS	400	<0.6[12]	<1	**11**	<3	**2400**[13]	<500	**18,000**	--	--	--	--	--	--	--	--
		B-2-32.5	32.5	53.5	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	**99**	--	--	--	--	--	--	--	--
B-3	69	B-3-8.0	8.0	61.0	HS	200	<0.03	<0.05	<0.05	<0.2	<12	**93**	**850**	**6.0**	--	<0.59	**51**	<7.1	**0.03**	--	--
		B-3-14.0	14.0	55.0	HS	100	<0.03	<0.05	<0.05	<0.2	<3	<25	**82**	**9.1**	--	<0.64	**41**	<7.7	**0.04**	--	--
B-4	69	B-4-10.5	10.5	58.5	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	**95**	**140**	<3.3	--	<0.55	**15**	<6.6	**0.06**	--	--
		B-4-14.0	14.0	55.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	<50	<4.0	--	<0.66	**56**	<7.9	**0.06**	--	--
B-5	69	B-5-10.0	10.0	59.0	HS	200	--	--	--	--	--	**130**[14]	**230**	--	--	--	--	--	--	--	--
B-6	69	B-6-10.0	10.0	59.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	<50	<7.6	--	<1.3	**60**	<15	**0.10**	--	--
B-7	69	B-7-4.0	4.0	65.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	<50	<2.8	--	<0.47	**23**	**890**	**0.08**	--	--
B-8	69	B-8-8.0	8.0	61.0	NS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	<50	--	--	--	--	--	--	--	--
B-9	69	B-9-8.0	8.0	61.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<3	<25	<50	--	--	--	--	--	--	--	--
HA-1[15]	69	HA-1-2.0	2.0	67.0	HS	<100	<0.01	<0.01	<0.01	<0.01	--	<1,300	**28,000**	--	--	--	--	--	--	--	--
		HA-1-4.0	4.0	65.0	HS	<100	--	--	--	--	--	<630	**19,000**	--	--	--	--	--	--	--	--
September 1993 Offsite Monitoring Well[16]																					
MW-5	86	MW-5-9	45.0	41.0	NS	<1	ND	ND	ND	ND	<1.0	<10	<25	--	--	--	--	--	--	--	--
MTCA Method A or B Cleanup Level for Unrestricted Land Use							0.03	6	7	9	30/100[17]	2,000	2,000	20	16,000[18]	2	2,000[19]	250	2	400[18]	400[18]
Natural Background Soil Metals Concentrations in the Puget Sound[20]							--	--	--	--	--	--	--	7	ne	1	48	24	0.07	ne	ne

Notes on Page 3

Notes:

[1]A copy of laboratory reports documneting chemical analytical data is presented in Appendix B.

[2]Approximate exploration locations are shown on attached Figure 2.

[3]Elevations based on Topographic Survey drawing provided from Bush, Roed & Hitchings, Sheet 2 of 3, dated 11/13.

[4]Field screening methods are described in Appendix A.

[5]BETX analyzed by EPA Method 8021B and/or EPA Method 8260.

[6]Gasoline-range hydrocarbons analyzed by Northwest Method NWTPH-Gx Extended or petroleum hydrocarbon identification using Northwest Method NWTPH-HCID.

[7]Diesel- and heavy oil-range hydrocarbons analyzed by Northwest Method NWTPH-Dx Extended with a silica gel cleanup or petroleum hydrocarbon identification using Northwest Method NWTPH-HCID.

[8]Total metals analyzed by EPA Method 6020/7471 and/or EPA Method 6010C/7471B.

[9]Chemical analytical testing performed by OnSite Environmental Laboratory in Redmond, Washington.

[10]Chemical analytical testing by Fremont Analytical in Seattle, Washington.

[11]Chemical analytical testing by CCI Analytical Laboratories in Everett, Washington.

[12]Detection limit is greater than the MTCA Method A cleanup level. According to the laboratory, the elevated limit was due to matrix interence.

[13]Laboartory identified detection as mineral spirits.

[14]The laboratory analytical report indicated that this result was biased due to overlap from the heavy oil range hydrocarbons

[15]Soil in vicinity of HA-1 partially excavated during 2002 UST closure. Refer to 2002 Environmental Tank Services Report for information on soil condition in vicinity of remaining UST.

[16]Chemical analytical testing by North Creek Analytical Laboratories, Inc. in Redmond, Washington.

[17]When benzene is present, the gasoline range cleanup level is 30 mg/kg. When benzene is not present the gasoline range cleanup level is 100 mg/kg.

[18]Method A Cleanup level not available, Method B Cleanup level was used.

[19]Cleanup level for Chromium III.

[20]90th Percentile for natural background soil metals concentrations in Puget Sound region, Department of Ecology, publication #94-115, dated October 1994.

-- = Not tested

bgs = below ground surface

HS = Heavy sheen

mg/kg = milligrams per kilogram

MS = Moderate sheen

MTCA = Model Toxics Control Act

ne = not established

NS = No sheen

ppm = parts per million

SS = Slight sheen

Bold value indicates analyte was detected at the listed concentration.

Shading indicates analyte detected at concentration exceeding the MTCA Method A or B cleanup level for unrestricted land use.

Table 2

Soil Chemical Analytical Data
PAHs and SVOCs
Ninth Avenue and Lenora Street
Seattle, Washington

Exploration Location[1]	Surface Elevation[2] (feet)	Sample Identification	Sample Depth (feet bgs)	Sample Elevation (feet)	Polycyclic Aromatic Hydrocarbons (PAHs)[3] (µg/kg)																Total cPAHs[4] (µg/kg)	SVOCs[3] (µg/kg)			
					Non-carcinogenic PAHs									Carcinogenic PAHs											
					Naphthalenes[5]	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(g,h,i) perylene	Benzo(a) anthracene	Chrysene	Benzo(b) fluoranthene	Benzo(j,k) fluoranthene	Benzo(a) pyrene	Indeno (1,2,3-cd) pyrene	Dibenzo(a,h) anthracene	TEQ	Butylbenzyl-phthalate	Diethylphthalate	bis(2-Ethylhexyl) adipate	Di-n-butylphthalate
September 2014 Explorations[6]																									
DP-1	69	DP-1-4.0	4.0	65.0	**890**	**57**	**53**	**170**	**660**	**75**	**480**	**420**	**140**	**220**	**260**	**180**	**140**	**220**	**120**	**55**	**294.1**	--	--	--	--
		DP-1-8.0	8.0	61.0	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	<7.8	5.88	--	--	--	--
DP-2	69	DP-2-4.0	4.0	65.0	**220**	<14	**19**	**34**	**130**	**27**	**160**	**140**	**28**	**60**	**63**	**32**	**37**	**48**	**26**	<14	**64.83**	--	--	--	--
		DP-2-8.0	8.0	61.0	**9,960**	**44**	**180**	**310**	**650**	**64**	**45**	**350**	**110**	**120**	**120**	**58**	**20**	**100**	**26**	**14**	**125**	--	--	--	--
		DP-2-14.0	14.0	55.0	**55**	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	<8.7	6.56	--	--	--	--
DP-4	86	DP-4-4.0	4.0	82.0	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	<7.2	5.43	--	--	--	--
December 2013 Explorations[6]																									
E-1	70	E-1-5-12.5	12.5	57.5	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	<8.6	6.55	<43	<210	<43	<43
E-2	70	E-2-1-2.5	2.5	67.5	**9.3**	<7.6	<7.6	<7.6	**31**	**8.4**	**41**	**42**	**21**	**23**	**24**	**39**	**17**	**26**	**16**	<7.6	**36**	<38	<190	<38	<38
G-1	70	G-1-2-10.0	10.0	60.0	<7.4	<7.4	<7.4	<7.4	<7.4	<7.4	<7.4	**12**	<7.4	<7.4	<7.4	<7.4	<7.4	<7.4	<7.4	<7.4	5.6	<37	<180	**64**	<37
July 2013 Explorations[7]																									
MW-01	70	MW-01-3.0	3.0	67.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	<87.0	**65.7**	<109	**397**	<109	<109
GEI-7	69	GEI-7-4.0	4.0	65.0	**129**	<92.2	**194**	**122**	**1,010**	**179**	**690**	**701**	**170**	**204**	**217**	**285**	**127**	**273**	**158**	<92.2	**357**	<115	**506**	**347**	<115
		GEI-7-6.0	6.0	63.0	--	--	--	--	--	--	--	--	--	<52.4	<52.4	<52.4	<52.4	<52.4	<52.4	<52.4	**39.4**	--	--	--	--
GEI-8	69	GEI-8-1.0	1.0	68.0	<85.5	<85.5	<85.5	<85.5	**146**	<85.5	**162**	**165**	**92.2**	**97.0**	<85.5	**159**	<85.5	**92.7**	<85.5	<85.5	**132**	<107	**448**	**363**	**217**
		GEI-8-7.0	7.0	62.0	--	--	--	--	--	--	--	--	--	<60.1	<60.1	<60.1	<60.1	<60.1	<60.1	<60.1	**45.4**	--	--	--	--
July 2007 Explorations[8]																									
GEI-2	67	GEI-2-4	4.0	63.0	**330**	**40**	**20**	**40**	**280**	**60**	**350**	**320**	**110**	**140**	**170**	**100**	**110**	**140**	**80**	**30**	**190**	--	--	--	--
GEI-5	69	GEI-5-6	6.0	63.0	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	**10**	--	--	--	--
August 2002 Explorations[8]																									
B-5	69	B-5-10.0	10.0	59.0	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	75.5	<100	<100	<130	<130
B-8	69	B-8-8.0	8.0	61.0	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	75.5	<100	<100	<130	<130
HA-1[9]	69	HA-1-4.0	4.0	65.0	**8,900**	<600	<600	<600	**840**	<600	**950**	**750**	<600	**770**	<600	<600	<600	<600	<600	<600	**500**	**13,000**[10]	<600	<780	5,000[6]
MTCA Method A or B Cleanup Level for Unrestricted Land Use					5,000[11]	ne	48,000[12]	3,200[9]	ne	24,000[12]	3,200[12]	2,400	ne	1,400[12]	140,000[12]	1,400[12]	14,000[12]	100	1,400[12]	140[12]	100	16,000[12]	64,000[12]	1,600[12]	8,000[12]

Notes:

[1]Approximate exploration locations shown on attached Figure 2.

[2]Elevations based on Topographic Survey drawing provided from Bush, Roed & Hitchings, Sheet 2 of 3, dated 11/13.

[3]Semi-volatile aromatic hydrocarbons (SVOCs), including polycyclic aromatic hydrocarbons (PAHs), analyzed by EPA Method 8270 and/or 8270D/SIM.

[4]Total carcinogenic PAHs (cPAHs) calculated using the toxicity equivalency (TEQ) methodology specified in WAC 173-340-780(8). cPAHs that were not detected were assigned half the value of the detection limit for these calculations.

[5]Listed concentration is sum of naphthalene, 2-methylnaphthalene, and 1-methylnaphthalene.

[6]Chemical analytical testing by OnSite Environmental, Inc. in Redomnd, Washington. A copy of the laboratory report is presented in Appendix B.

[7]Chemical analytical testing by Fremont Analytical in Seattle, Washington.

[8]Chemical analytical testing by CCI Analytical Laboratories in Everett, Washington.

[9]Soil in vicinity of HA-1 partially excavated during 2002 UST closure. Refer to 2002 Environmental Tank Services Report for information on soil condition in vicinity of remaining UST.

[10]The laboratory analytical report indicated that the detected concentration of this analyte was likely due to laboratory contamination.

[11]MTCA Method A Cleanup level for Naphthalenes

[12]MTCA Method B Cleanup level

-- = not tested

bgs = below ground surface

MTCA = Model Toxics Control Act

ne = not established

µg/kg = micrograms per kilogram

Bold value indicates analyte was detected at the listed concentration.

Shading indicates analyte detected at concentration exceeding the MTCA Method A or B cleanup level.

Table 3

Summary of Perched Water and Groundwater Chemical Analytical Data

BETX, Petroleum Hydrocarbons, and VOCs

Ninth Avenue and Lenora Street

Seattle, Washington

Sample Identification[1]	BETX[2] (µg/L)				Total Petroleum Hydrocarbons (µg/L)			VOCs[5] (µg/L)
	Benzene	Ethylbenzene	Toluene	Xylenes	Gasoline Range[3]	Diesel Range[4]	Heavy Oil Range[4]	
July 2015 - Groundwater water Samples[6]								
G-1-W-071715	<1.0	<1.0	<1.0	<2.0	<100	<260	<410	--
September 2014 - Perched water Samples[6]								
DP-3-W	<1.0	<1.0	<1.0	<2.0	<100	<270	<430	--
DP-4-W	<1.0	<1.0	<1.0	<2.0	<100	**310**	<450	--
DP-5-W	<1.0	<1.0	<1.0	<2.0	<100	<310	<490	--
December 2013 - Grab Groundwater Sample[6]								
G-1-20131223	<0.20	<0.20	<1.0	**1.27**	<100	<260	<410	1,2-Dichloroethane **0.49** 1,2,4-Trimethylbenzene **0.24**
August 2002 - Perched Water Samples[7]								
B-1	--	--	--	--	--	--	--	<2.0
B-2	<10[8]	**39**	<10	**170**	**28,000**	<25,000[8]	**540,000**	<2.0
B-3	--	--	--	--	--	**73,000**	**470,000**	<2.0
September 1993 - Groundwater sample from offsite Monitoring Well MW-5[9]								
MW-5	ND	ND	ND	ND	<50	<250	<750[10]	Acetone **18**[11]
MTCA Method A Cleanup Level	5	700	1,000	1,000	800	500	500	1,2-Dichloroethane = 5 1,2,4-Trimethylbenzene = NE Acetone = 7,200

Notes:

[1]Approximate sample locations are shown in Figure 2.

[2]Analyzed by EPA Method 8021 and/or EPA Method 8021B.

[3]Analyzed by Ecology Method NWTPH-Gx.

[4]Analyzed by Ecology Method NWTPH-Dx.

[5]Analyzed by EPA Method 8260 and/or EPA Method 8260C. Only detected analytes are listed in the table.

[6]Chemical analyses conducted by Onsite Environmental of Redmond, Washington. A copy of the laboratory report is presented in Appendix B.

[6]Chemical analyses conducted by CCI Laboratory of Everett, Washington.

[8]Detection limit exceeds cleanup level. According to the lab, the elevated detection limit is due to unavoidable matrix interference.

[9]Chemical analyses conducted by North Creek Analytical Laboratory of Redmond, Washington.

[10]Detection limit exceeds current cleanup level. Detection limits were below the applicable cleanup level at the time of analysis.

[11]Acetone was also detected in trip blanks. Therefore, the acetone detection in this sample was determined to be caused by laboratory operation.

-- = Not analyzed

µg/L = micrograms per liter

MTCA = Model Toxics Control Act

ND = Not detected

NE = Method A or B cleanup level not established

Bold value indicates analyte was detected at the listed concentration.

Shading indicates analyte detected at concentration exceeding the MTCA Method A or B cleanup level for unrestricted land use.

Table 4

Summary of Perched Water and Groundwater Chemical Analytical Data

Metals

Ninth Avenue and Lenora Street
Seattle, Washington

Sample Identification[1]	Sample Date	Total Metals[3] (mg/L)				Dissolved Metals[4] (mg/L)
		Arsenic	Total Chromium	Lead	Mercury	Total Chromium
Groundwater sample from onsite Monitoring Well G-1[5]						
G-1	4/21/2014	**0.0037**	**0.033[6]**	**0.0014**	<0.0005	<0.0005
Perched Water Samples[5,7]						
DP-3-W	9/2/2014	**0.025**	**0.09**	**0.0125**	<0.0005	--
DP-4-W	9/2/2014	**0.082**	**0.72**	**0.084**	**0.00061**	--
DP-5-W	9/2/2014	**0.043**	**0.31**	**0.041**	<0.0005	--
B-2	1/31/2002	**0.010**	**0.07**	**0.069**	<0.0002	--
B-3	1/31/2002	**0.10**	**3.2**	**8.1**	**0.0037**	--
MTCA Method A Cleanup Level		0.005	0.050	0.015	0.002	0.05

Notes:

[1]Approximate exploration locations are shown in Figure 2.

[2]Analyzed by EPA Method 8270D/SIM.

[3]Analyzed by EPA Methods 200.8 and 6000/7000 Series. Only detected analytes are listed.

[4]Analyzed by EPA Method 200.8.

[5]Chemical analyses conducted by Onsite Environmental of Redmond, Washington. G-1 was additionally analyzed for semivolatiles. No compounds were detected above the practical quantitation limit.

[6]Sample result shown is result of analysis of the April 21, 2014 sample from well G-1. Total chromium was detected in a December 2013 grab groundwater sample at a concentration of 0.052 mg/L. The slight elevation of the 2013 sample above the MCTA Method A cleanup limit was the result of turbidity in the sample. See text for further explanation.

[7]Chemical analyses of September 2014 samples conducted by Onsite Environmental Labaoratory in Redmond, Washington and January 2002 samples by CCI Laboratory of Everett, Washington. The discrete, one-time samples were obtained directly from the boreholes of borings B-2 (south) and B-3 (southwest) in 2002 and should be considered reconnaissance samples. These perched water samples were biased high for metals because silt particles were incorporated into the sample bottles and does not represent groundwater conditions at the subject property. Sample G-1 obtianed from a monitoring well is representative of groundwater quality, at the subject property. See report text for further explanation.

-- = Not analyzed

mg/L = milligrams per liter

MTCA = Model Toxics Control Act

Bold value indicates analyte was detected at the listed concentration.

Shading indicates analyte detected at concentration exceeding the MTCA Method A or B cleanup level for unrestricted land use.

Table 5

Soil Field Screening and Chemical Analytical Data[1]

BETX and Petroleum Hydrocarbons

Ninth Avenue and Lenora Street

Seattle, Washington

Exploration Location[2]	Approximate Surface Elevation[3] (feet)	Sample Identification	Sample Depth (feet bgs)	Approximate Sample Elevation (feet)	Field Screening[4]		BETX[5] (mg/kg)				Petroleum Hydrocarbons (mg/kg)		
					Sheen	Headspace Vapor (ppm)	Benzene	Ethylbenzene	Toluene	Total Xylenes	Gasoline Range[6]	Diesel Range[7]	Heavy Oil Range[7]
9th Avenue Deep Sewer Utility Excavation Samples[8]													
UTL9-S	87	UTL9-S-5.0	5.0	82.0	NS	<1	<0.020	<0.064	<0.064	<0.064	<6.4	--	--
		UTL9-S-15.0	15.0	72.0	NS	<1	**0.022**	<0.049	<0.049	**0.057**	<4.9	<29	<57
		UTL9-S-20.0	20.0	67.0	NS	<1	**0.029**	<0.050	<0.050	**0.164**	<5.0	--	--
		UTL9-S-23.0	23.0	57.0	NS	<1	<0.020	<0.053	<0.053	<0.053	<5.3	<28	<56
		UTL9-S-30.0	30.0	57.0	NS	<1	<0.020	<0.086	<0.086	<0.086	<8.6	--	--
UTL9-N		UTL9-N-5.0	5.0	82.0	NS	<1	<0.020	<0.055	<0.055	<0.055	<5.5	--	--
		UTL9-N-18.0	18.0	69.0	MS	13	<0.020	<0.059	<0.059	<0.059	<5.9	**180**	**1700**
UTL9-E		UTL9-E-15.0	15.0	72.0	SS	<1	**0.06**	<0.060	<0.060	<0.060	<6.0	**34**	<59
		UTL9-E-18.0	18.0	69.0	SS	5	0.052	<0.065	<0.065	<0.065	**50**	--	--
East Shoring Walls[8]													
EX-1	87	EX-1-6.0	6.0	81.0	NS	<1	<0.020	<0.051	<0.051	<0.051	<5.1	--	--
		EX-1-12.0	12.0	75.0	NS	<1	<0.020	<0.059	<0.059	<0.059	<5.9	<27	<55
		EX-1-18.0	18.0	69.0	NS	<1	<0.020	<0.061	<0.061	<0.061	<6.1	<28	**68**
MTCA Method A or B Cleanup Level for Unrestricted Land Use							0.03	6	7	9	30/100[9]	2,000	2,000

Notes:

[1]A copy of laboratory reports documenting chemical analytical data is presented in Appendix B.

[2]Approximate exploration locations are shown on attached Figure 2 and/or Figure 3.

[3]Elevations based on Topographic Survey drawing provided from Bush, Roed & Hitchings, Sheet 2 of 3, dated 11/13.

[4]Field screening methods are described in Appendix A.

[5]BETX analyzed by EPA Method 8021B and/or EPA Method 8260.

[6]Gasoline-range hydrocarbons analyzed by Northwest Method NWTPH-Gx Extended or petroleum hydrocarbon identification using Northwest Method NWTPH-HCID.

[7]Diesel- and heavy oil-range hydrocarbons analyzed by Northwest Method NWTPH-Dx Extended with a silica gel cleanup or petroleum hydrocarbon identification using Northwest Method NWTPH-HCID.

[8]Chemical analytical testing performed by OnSite Environmental Laboratory in Redmond, Washington.

[9]When benzene is present, the gasoline range cleanup level is 30 mg/kg. When benzene is not present the gasoline range cleanup level is 100 mg/kg.

-- = Not tested

bgs = below ground surface

HS = Heavy sheen; MS = Moderate sheen; NS = No sheen

mg/kg = milligrams per kilogram

MTCA = Model Toxics Control Act

ppm = parts per million

Bold value indicates analyte was detected at the listed concentration.

Shading indicates analyte detected at concentration exceeding the MTCA Method A or B cleanup level for unrestricted land use.

Table 6

Site Specific Applicable or Relevant and Appropriate Requirements (ARARs)

Ninth Avenue and Lenora Street

Seattle, Washington

Authorizing Statute	Implementing Regulation	Description	Rationale
Potential Chemical-Specific ARARs			
Hazardous Waste Management; Chapter 70.105D RCW	Washington Model Toxics Control Act Cleanup Regulation; Chapter 173-340 WAC	Establishes groundwater and soil cleanup levels.	Potentially applicable to contaminated soil at the Site.
Potential Action-Specific ARARs			
Hazardous Waste Management; Chapter 70.105D RCW	Selection of Cleanup Actions; WAC 173-340-350	Minimum requirements and procedures for conducting remedial investigation and feasibility studies.	Applicable to remedial action selection and implementation.
Hazardous Waste Management; Chapter 70.105D RCW	Institutional Controls; WAC 173-340-440	Institutional control requirements.	Potentially applicable to remedial action selection and implementation.
Hazardous Waste Management; Chapter 70.105D RCW	Compliance Monitoring Requirements; WAC 173-340-410, -720(9), -730(7), -740(7), and -745(8)	Compliance monitoring requirements for soil, groundwater, and surface water.	Potentially applicable to remedial action selection and implementation.
Ecology Area of Contamination Policy	8/20/1991 Interprogram Policy	Allows movement/placement of excavated contaminated material within the regulated site without triggering dangerous waste designation.	Potentially applicable for containment remedial alternatives.
Water Well Construction; Chapter 18.104 RCW	Minimum Standards for Construction and Maintenance of Wells; Chapter 173-160 WAC	Applies to the construction and maintenance of monitoring wells	Potentially applicable to wells constructed for groundwater withdrawal and monitoring and decommissioning of existing or future wells.
Hazardous Waste Management; Chapter 70.105 RCW	Dangerous Waste Regulations; Chapter 173-303 WAC	Applies if dangerous wastes are generated during remedial program	These regulations must be fully complied with for any off site disposal of waste determined to be dangerous waste. This would only apply to upland remedial options as dredged sediment is exempt from waste classification.
Washington State Water Pollution Control Act; Chapter 90.48 RCW	NPDES Permit Program; Chapter 173-220 WAC	Applicable to the discharge of pollutants and other wastes and materials to the surface waters of the state	Not applicable
State Environmental Policy Act (SEPA); Chapter 43.21C.110 RCW	SEPA Rules; Chapter 197-11 WAC	Applies if future construction/remedial action occurs at the site	Applies if future construction/ remedial action occurs at the site.
Solid Waste Management; Chapter 43.21A RCW	Minimum Functional Standards for Solid Waste Handling WAC 173-304	Establishes minimum functional standards for the handling of solid waste.	Applies if non-dangerous wastes are generated during remedial action
Transportation of Hazardous Material; 49 USC 5101-5127	Hazardous Materials Regulations; 49 CFR Parts 171 through 180	Regulations that govern the transportation of hazardous materials.	Applies to any hazardous materials transported off-site as part of remediation.
Hazardous Waste-Land Disposal Restrictions; USEPA	40 CFR 268/22 CCR 66268	Establishes land disposal restrictions and treatment standards for hazardous wastes applicable to generators.	Any hazardous wastes generated as a result of on-site activities or by treatment systems must meet land disposal restriction requirements.
Washington State Clean Air Act; Chapter 70.94 RCW	General Requirements for Air Pollution Sources; Chapter 173-400 WAC. Controls for New Sources of Toxic Air Pollutants; Chapter 173-460 WAC	Establishes technically feasible and reasonably attainable standards and rules generally applicable to the control and/or prevention of the emission of air contaminants.	May apply to remedial alternatives that produce emissions to air.

Table 7

Evaluation of Alternatives and Applied Technologies

Ninth Avenue and Lenora Street

Seattle, Washington

Remedial Alternative	Alternative 1 - Institutional and Engineering Controls	Alternative 2 - Remedial Excvation to MTCA Method A Cleanup Levels	Alternative 3 - Chemical Oxidation In-Situ Remediation to MTCA Method A Cleanup Levels
Alternative Description	■ Leave in place remaining soil with contaminant concentrations exceeding MTCA Method A cleanup levels. ■ Contaminated soil remaining in Lenora Street Sidewalk and the Alley capped. ■ Conduct opportunistic source removal during construction excavation for any future redevelopment. ■ Implement environmental covenant with institutional controls that restrict future use and activities in the areas of Lenora Street Sidewalk and public Alley (rights-of-way) where residual soil contamination remains in place.	■ Excavate approximately 500 cubic yards of petroleum contaminated soil from the Lenora Street sidewalk and Alley portion of the Site and dispose of the excavated soil at a permitted off-site landfill. ■ Contaminated soil remaining adjacent to the south and west shoring wall capped. ■ Implement environmental covenant with institutional controls that restrict future use and activities in the areas of public rights-of-way where residual soil contamination remains in place.	■ Leave in place remaining soil with contaminant concentrations exceeding MTCA Method A cleanup levels. ■ Complete two or more phases of chemical oxidation insitu remediation, such as Regenesis Regenox, in the petroleum contaminated soil. ■ Collect performance and characterization soil samples. ■ Contaminated soil remaining adjacent to the south and west shoring wall capped. ■ Implement environmental covenant with institutional controls that restrict future use and activities in the areas of public rights-of-way where residual soil contamination remains in place.
Compliance with MTCA Threshold Criteria			
Protection of Human Health and the Environment	**Yes** - Alternative would protect human health and the environment through a combination of engineering and institutional controls.	**Yes -** Alternative would protect human health and the environment through a combination of source removal and engineering and institutional controls.	**Yes -** Alternative would protect human health and the environment through a combination of in-situ soil and groundwater treatment and engineering and institutional controls.
Compliance With Cleanup Standards	**Yes -** Alternative is expected to comply with cleanup standards. This alternative utilizes institutional controls to prevent exposure to soil and groundwater left in place containing contaminants exceeding cleanup levels. Compliance would rely on long-term monitoring and maintenance of institutional controls. Future development of property could potentially require additional environmental cleanup or special provisions.	**Yes -** Alternative is expected to comply with cleanup standards to the greatest extent practicable. Removal of soil results in the reduction of contaminant concentrations.	**Yes -** Alternative is expected to comply with cleanup standards. This alternative utilizes source removal and institutional controls to prevent exposure to soil left in place containing contaminants exceeding cleanup levels. Compliance would rely on long-term monitoring and maintenance of institutional controls.

Compliance With Applicable State and Federal Regulations	**Yes -** Alternative complies with applicable state and federal regulations. Future development of Lenora Street and public Alley rights-of-way would involve additional opportunistic source removal.	**Yes -** Alternative complies with applicable state and federal regulations. Future development of property would not require additional environmental cleanup or special provisions.	**Yes -** Alternative complies with applicable state and federal regulations.
Provision for Compliance Monitoring	**Yes -** Alternative includes provisions for compliance monitoring.	**Yes -** Alternative includes provisions for compliance monitoring.	**Yes -** Alternative includes provisions for compliance monitoring.
Restoration Time Frame			
Restoration Time Frame	Restoration time frame is relatively short. Primary cleanup action components have already been implemented. The time frame for long-term monitoring is unknown. Potential future maintenance of institutional controls and coordination of proper handling and disposal of contaminated soil during future site development may extend the restoration time frame of this alternative.	Restoration time frame is relatively short. This remedial scenario makes assumptions that include selected building reconstruction and street improvements and extreme shoring situations to access contaminated soil. Time frame of design and excavation is approximately 6 - 12 months. The time frame for long-term monitoring is unknown.	Restoration time frame is unpredictable. Significant unknowns and unquantifiable elements exist relative to cost and timeframes.
Relative Benefits Ranking (Scored from 1-lowest to 10-highest)			
Protectiveness	Score = 6 Achieves a medium level of overall protectiveness as this alternative would leave in place contaminated soil, and protectiveness would rely on maintenance of institutional controls to prevent exposure.	Score = 10 Achieves a high level of overall protectiveness as a result of removing the gasoline contaminated source material at the Site.	Score = 7 Achieves a medium-high level of overall protectiveness as a result of in-situ treatment of the soil that poses risk to human and ecological receptors at the Site. Possible challenges to complete in-situ remediation due to access issues from underground utilities and dense low-permeability native soil.
Permanence	Score = 7 Achieves a medium level of permanence, primarily through the use of the concrete sidewalks and asphalt roadway as a cap. This achieves a reduction of toxicity and mobility, but relies on natural attenuation methods to achieve a reduction of mass. Future sidewalk and roadway improvement projects may require modification of the remedy.	Score = 10 Achieves a high level of permanence through the removal and disposal of mass, toxicity, and mobility of Site contaminants.	Score = 9 Achieves a high level of permanent reduction of mass, toxicity, and mobility of hazardous substances at the Site through use of in-situ soil treatment. This alternative would reduce the extent feasible the need to perform additional actions as the result of future development.

Long-Term Effectiveness	Score = 6 This Alternative achieves a medium level of long-term effectiveness. The use of existing concrete sidewalk and asphalt roadway cap leaves soil on site that exceeds cleanup levels. The use of institutional controls reduces the risk to human health and the environment from the residual contamination left in place. Future sidewalk and roadway improvement projects may require modification of the remedy.	Score = 10 This Alternative achieves a high level of long-term effectiveness. The addition of removal of contaminated soil in the Lenora Street and public Alley rights-of-way portion of the site increases the long-term effectiveness of the Alternative by preventing cap failure and potential for exposure to contaminated soil.	Score = 9 Reduces mass, toxicity, and mobility of hazardous substances at the site to concentrations less than the MTCA Method A Cleanup Levels.
Management of Short-Term Risks	Score = 10 Short-term risks are low with this alternative due to the lack of construction activities involved in completing the components of the alternative. The concrete sidewalk and asphalt roadway capping prevention components have been completed.	Score = 10 Short-term risks are moderately low with this alternative. The soil removal included in this Alternative involves additional soil excavation that is not expected to pose significant risks to the public.	Score = 8 Short-term risks associated with this alternative would be moderately low. This alternative involves selective drilling and injection/monitoring well installation overlying remaining contaminated soil to be removed. This modification and subsequent reconstruction would involve difficult construction methods and would increase the risk to construction and remediation personnel.
Technical and Admin. Implementability	Score = 10 Easily implemented. No active cleanup activities required. Administrative implementability of institutional controls is high.	Score = 1 Difficult to implement due to the extreme technical planning associated with shoring and excavation below Lenora Street sidewalk and public Alley. Excavation of contaminated fill from beneath the Lenora Street sidewalk and public Alley portions of the Site involves a minor volume of soil, but utilizes standard excavation methods. Additionally, it will require a great deal of coordination, permitting and engineering to temporarily reroute utilities and traffic concerns. Administrative implementability of institutional controls is high.	Score = 3 Difficult to implement due to a great deal of coordination, permitting to complete injections in 5th Avenue. Follow up performance monitoring and injections will be required and will likely need to be completed in night-time hours due to the heavy traffic flow of the location in Downtown Seattle.
Consideration of Public Concerns	Score = 7 Further migration of contaminants away from the immediate source and toward off-site properties, which could result in concerns by the public and nearby property owners.	Score = 8 Addresses the contaminants and exposure pathways of greatest concern. Poses little risk and is expected to be of minimal concern to the public with the exception of utility and traffic disruptions.However, the extensive remediation construction required to remove a limited amount of remaining contaminated soil would not be expected to be seen as cost effective by the public.	Score = 7 Addresses the contaminants and exposure pathways of greatest concern using aggressive in-situ technologies. However, the extensive remediation construction required to remove a limited amount of remaining contaminated soil would not be expected to be seen as cost effective by the public.

Table 8

Summary of MTCA Evaluation and Ranking of Cleanup Action Alternatives

Ninth Avenue and Lenora Street

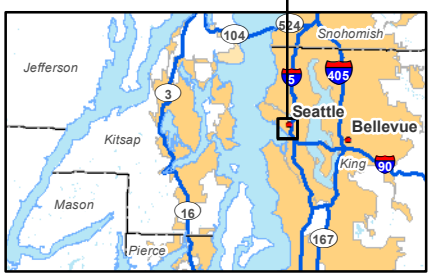
Seattle, Washington

Remedial Alternative	Alternative 1 - Institutional and Engineering Controls	Alternative 2 - Remedial Excvation to MTCA Method A Cleanup Levels	Alternative 3 - Chemical Oxidation In-Situ Remediation to MTCA Method A Cleanup Levels
Compliance with MTCA Threshold Criteria	Yes	Yes	Yes
Restoration Time Frame	Minimal	6 to 60 months	1-5 years
Relative Benefits Ranking			
Protectiveness (weighted as 30%)	1.8	3.0	2.1
Permanence (weighted as 20%)	1.4	2.0	1.8
Long-Term Effectiveness (weighted as 20%)	1.2	2.0	1.8
Management of Short-Term Risks (weighted as 10%)	1.0	1.0	0.8
Technical and Administrative Implementability (weighted as 10%)	1.0	0.1	0.3
Consideration of Public Concerns (weighted as 10%)	0.7	0.8	0.7
Total of Scores	**7.1**	**8.9**	**7.5**
Disproportionate Cost Analysis			
Probable Remedy Cost (+50%/-30%, rounded)	$70,000	$2,240,000	$1,740,000
Costs Disproportionate to Incremental Benefits	NO	YES	YES
Practicability of Remedy	Practicable	Not Practicable	Not Practicable
Remedy Permanent to Maximum Extent Practicable	No	Yes	Yes
Overall Alternative Ranking	**1st**	**3rd**	**2nd**

FIGURES

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Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps, Street Maps 2005

Transverse Mercator, Zone 10 N North, North American Datum 1983
North arrow oriented to grid north

N
W E
S

2,000 0 2,000
Feet

Vicinity Map

9th and Lenora Development
Seattle, Washington

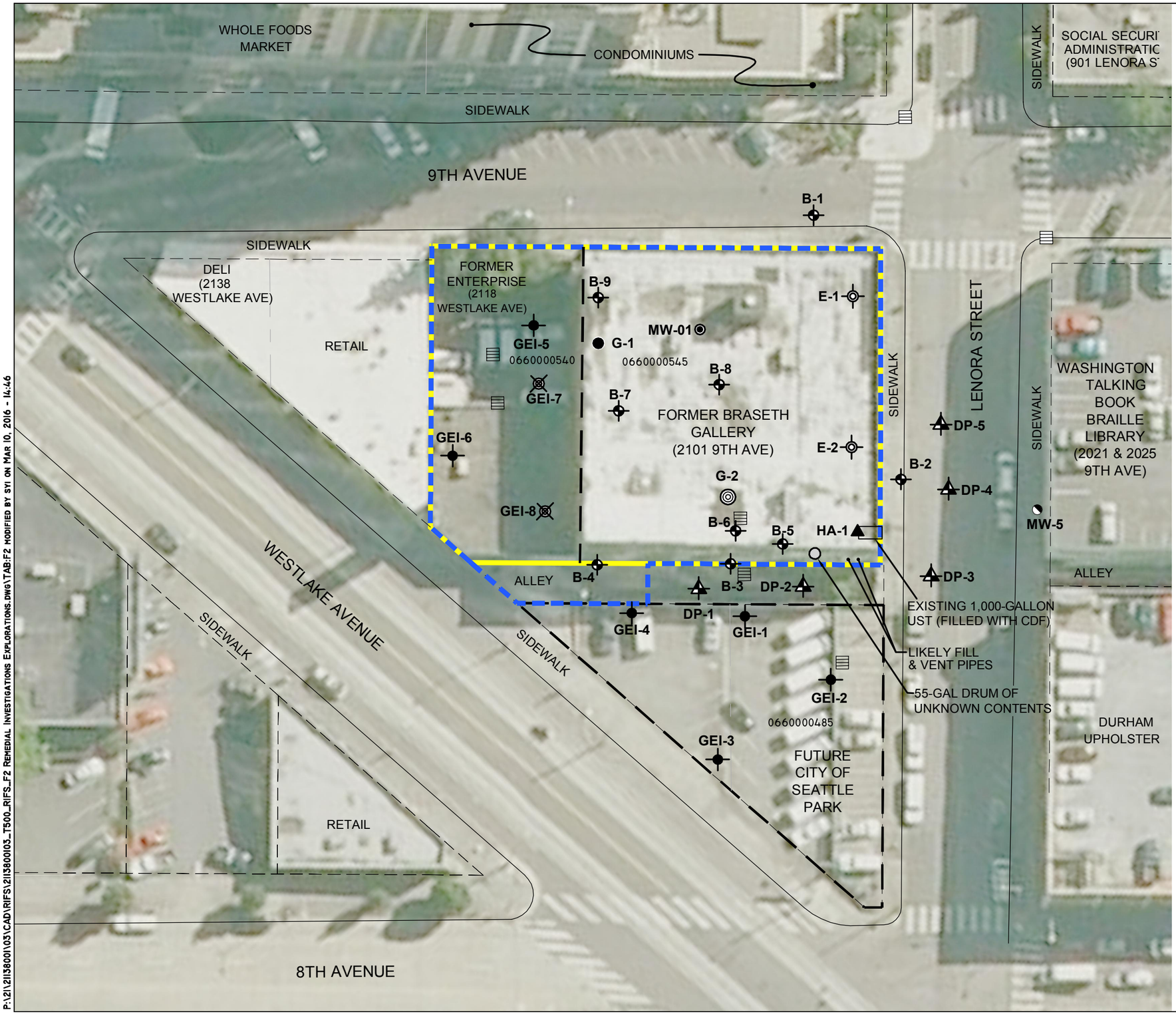
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Figure 1

Map Revised: 9/10/2014 EL

Path: \\red\projects\21\21138001\GIS\2113800100_F1_VicinityMap.mxd

Office: Redmond



P:\21\2\i3800\03\CAD\RIFS\2i3800103_T500_RIFS_F2 REMEDIAL INVESTIGATIONS EXPLORATIONS.DWG\TAB:F2 MODIFIED BY SYI ON MAR 10, 2016 - 14:46

Legend:

- Subject Property Boundary
- Mass Excavation Limits
- DP-1 — Direct-Push Boring (GeoEngineers, Sep. 2014)
- E-2 — Soil Boring (GeoEngineers, Dec. 2013)
- G-1 — Monitoring Well (GeoEngineers, Dec. 2013)
- G-2 — Soil Boring (GeoEngineers, Dec. 2013)
- GEI-7 — Soil Boring (GeoEngineers, July 2013)
- MW-01 — Monitoring Well (GeoEngineers, July 2013)
- GEI-1 — Soil Boring (GeoEngineers, July 2007)
- HA-1 — Hand Auger Boring (GeoEngineers, Aug. 2002)
- B-2 — Direct-Push Boring (GeoEngineers, Aug. 2002)
- MW-5 — Offsite Monitoring Well (GeoEngineers, Sep. 1993)
- Catch Basin
- (2101 9TH AVE) — Property Address
- 0660000545 — Parcel Number
- UST — Underground Storage Tank
- CDF — Controlled Density Fill
- Parcel Line

N W E S

40 0 40

FEET

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

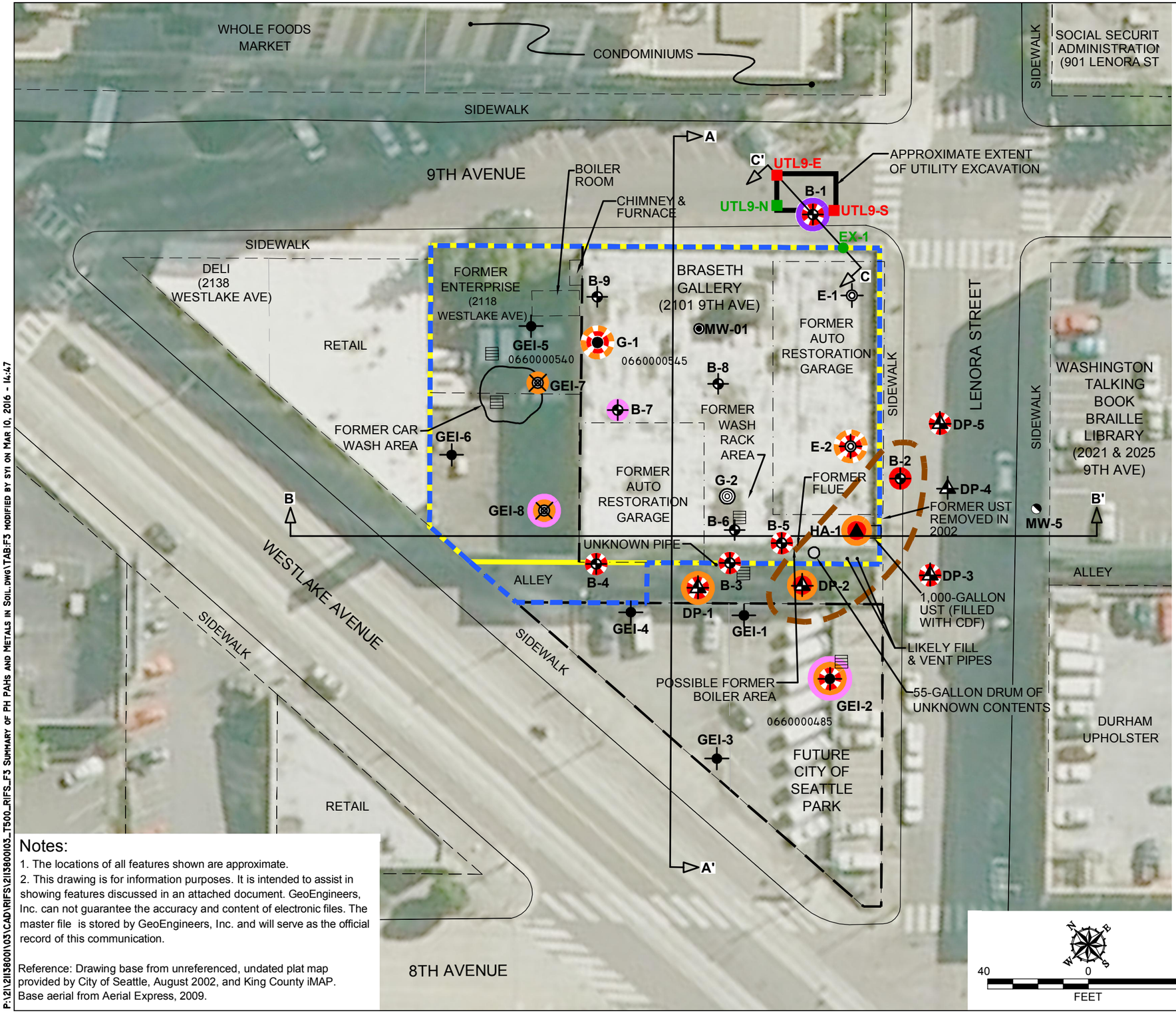
Reference: Drawing base from unreferenced, undated plat map provided by City of Seattle, August 2002, and King County iMAP. Base aerial from Aerial Express, 2009.

Remedial Investigations Explorations

9th and Lenora Development
Seattle, Washington

GeoEngineers

Figure 2



Legend:

- Subject Property Boundary
- Mass Excavation Limits
- UTL9-N — Soil Sample Location
- DP-1 — Direct-Push Boring (GeoEngineers, Sep. 2014)
- E-2 — Soil Boring (GeoEngineers, Dec. 2013)
- G-1 — Monitoring Well (GeoEngineers, Dec. 2013)
- G-2 — Soil Boring (GeoEngineers, Dec. 2013)
- GEI-7 — Soil Boring (GeoEngineers, July 2013)
- MW-01 — Monitoring Well (GeoEngineers, July 2013)
- GEI-1 — Soil Boring (GeoEngineers, July 2007)
- HA-1 — Hand Auger Boring (GeoEngineers, Aug. 2002)
- B-2 — Direct-Push Boring (GeoEngineers, Aug. 2002)
- MW-5 — Offsite Monitoring Well (GeoEngineers, Sep. 1993)
- (2101 9TH AVE) — Property Address
- 0660000545 — Parcel Number
- UST — Underground Storage Tank
- CDF — Controlled Density Fill
- CUL — Applicable MTCA Method A Cleanup Level
- PAHs — Polycyclic Aromatic Hydrocarbons
- Parcel Line
- Estimated Footprint of Former Structures
- Petroleum hydrocarbons detected at concentrations above CUL
- Petroleum hydrocarbons detected at concentrations below CUL
- PAHs detected at concentrations above CUL
- PAHs detected at concentrations below CUL
- Metals detected at concentrations above CUL
- Benzene detected at concentrations above CUL
- Interpreted extent of petroleum-contaminated soil with MTCA exceedance
- Benzene and Gasoline Detected at a concentration greater than the MTCA Method A Cleanup Level
- Gasoline and Benzene not detected
- A — A' — Approximate cross section location

Notes:

1. The locations of all features shown are approximate.
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Reference: Drawing base from unreferenced, undated plat map provided by City of Seattle, August 2002, and King County iMAP. Base aerial from Aerial Express, 2009.

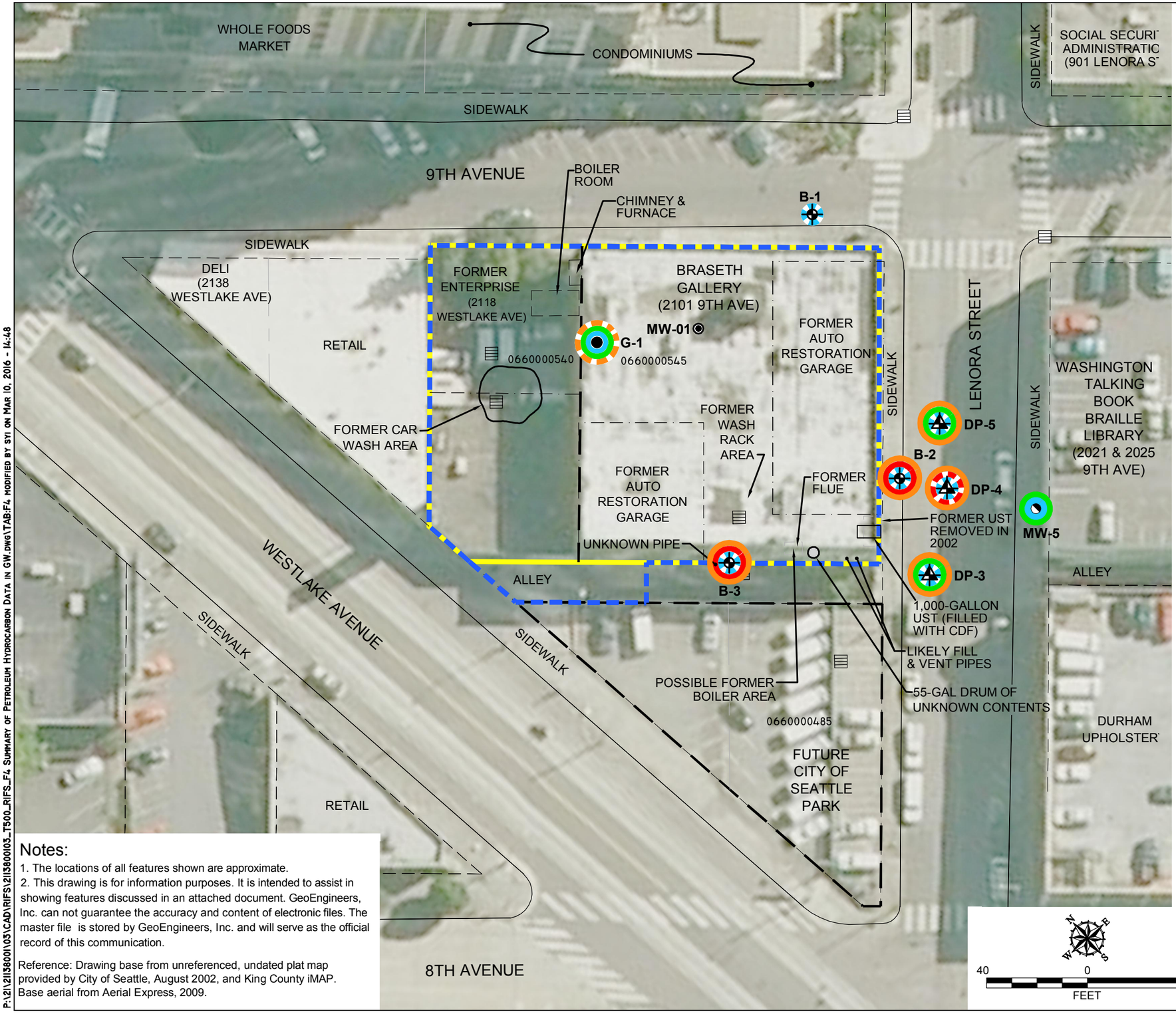
Summary of Petroleum Hydrocarbons, PAHs, and Metals Data in Soil

9th and Lenora Development
Seattle, Washington

GeoEngineers

Figure 3

P:\21\21I3800\03\CAD\RIFS\21I3800103_T500_RIFS_F3 SUMMARY OF PH PAHS AND METALS IN SOIL.DWG\TAB:F3 MODIFIED BY SYI ON MAR 10, 2016 - 14:47



Legend:

- Subject Property Boundary
- Mass Excavation Limits
- DP-1 — Direct-Push Boring (GeoEngineers, Sep. 2014)
- G-1 — Monitoring Well (GeoEngineers, Dec. 2013)
- MW-01 — Monitoring Well (GeoEngineers, July 2013)
- B-2 — Direct-Push Boring (GeoEngineers, Aug. 2002)
- MW-5 — Offsite Monitoring Well (GeoEngineers, Sep. 1993)
- Catch Basin
- (2101 9TH AVE) — Property Address
- 0660000545 — Parcel Number
- UST — Underground Storage Tank
- CDF — Controlled Density Fill
- CUL — Applicable MTCA Method A Cleanup Level
- Parcel Line
- Estimated Footprint of Former Structures
- Groundwater Sample from Monitoring Well
- Perched Water Sample from Boring
- Petroleum hydrocarbons detected at concentrations above CUL
- Petroleum hydrocarbons detected at concentrations below CUL
- Metals detected at concentrations above CUL
- Metals detected at concentrations below CUL
- Petroleum hydrocarbons not detected

Notes:

1. Benzene was not detected in B-1.
2. MW-01 was dry. Monitoring wells G-1 and MW-01 were decommissioned in July 2015, prior to mass excavation.
3. The discrete, one-time perched water samples were obtained directly from the boreholes of borings B-2, B-3 in 2002 and DP-3, DP-4, and DP-5 in 2014. These perched water samples should be considered reconnaissance samples. These samples were biased high for metals because silt particles were incorporated into the sample bottles and do not represent groundwater conditions at the subject property. Sample G-1 obtained from a monitoring well is representative of groundwater quality, at the subject property. Sample MW-5 obtained from a monitoring well is representative of groundwater quality, at the Lenora Street. See report text for further explanation.

Notes:

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2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Drawing base from unreferenced, undated plat map provided by City of Seattle, August 2002, and King County iMAP. Base aerial from Aerial Express, 2009.

N W E S

40 0 40

FEET

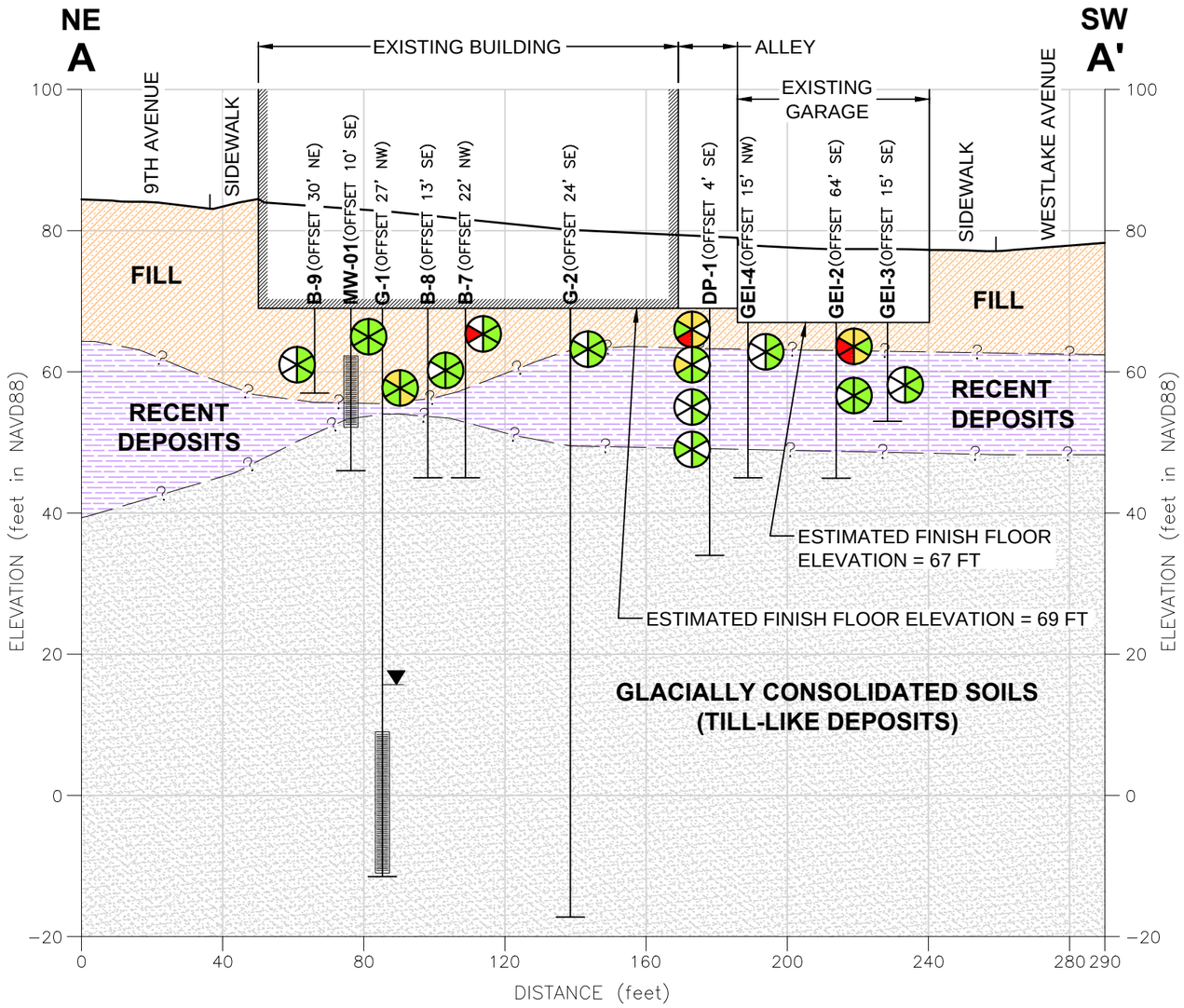
Summary of Petroleum Hydrocarbons and Metals Data in Perched Water and Groundwater

9th and Lenora Development
Seattle, Washington

GeoEngineers

Figure 4

P:\21\21I3800\03\CAD\RIFS\21I3800103_T500_RIFS_F4 SUMMARY OF PETROLEUM HYDROCARBON DATA IN GW.DWG\TAB:F4 MODIFIED BY SYI ON MAR 10, 2016 - 14:48



EXPLANATION:

Chemical Analytical Results of Discrete Soil Samples

PAHs — Diesel–Range Petroleum Hydrocarbons
Metals — Gasoline–Range Petroleum Hydrocarbons
cPAHs — Heavy Oil–Range Petroleum Hydrocarbons

- Detected at a concentration greater than the MTCA Method A Cleanup Level
- Detected at a concentration less than the MTCA Method A Cleanup Level
- Metals detected at concentrations similar to Natural Background Concentrations. Other analytes not detected
- Not Analyzed

PAHs — Polycyclic aromatic hydrocarbons

cPAHs — carcinogenic PAHs

B-7 (OFFSET 22' NW) — Boring number and approximate location

Groundwater level observed in monitoring well

Perched groundwater observed during drilling

Soil contact

Screen location

Fill

Recent deposits

Glacially consolidated soils (till–like deposits)

Notes:
1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
2. Refer to Figure 3 for location of Cross Section.
3. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

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Horizontal Scale in Feet
20 0 20
Vertical Scale in Feet
Vertical Exaggeration: 2X

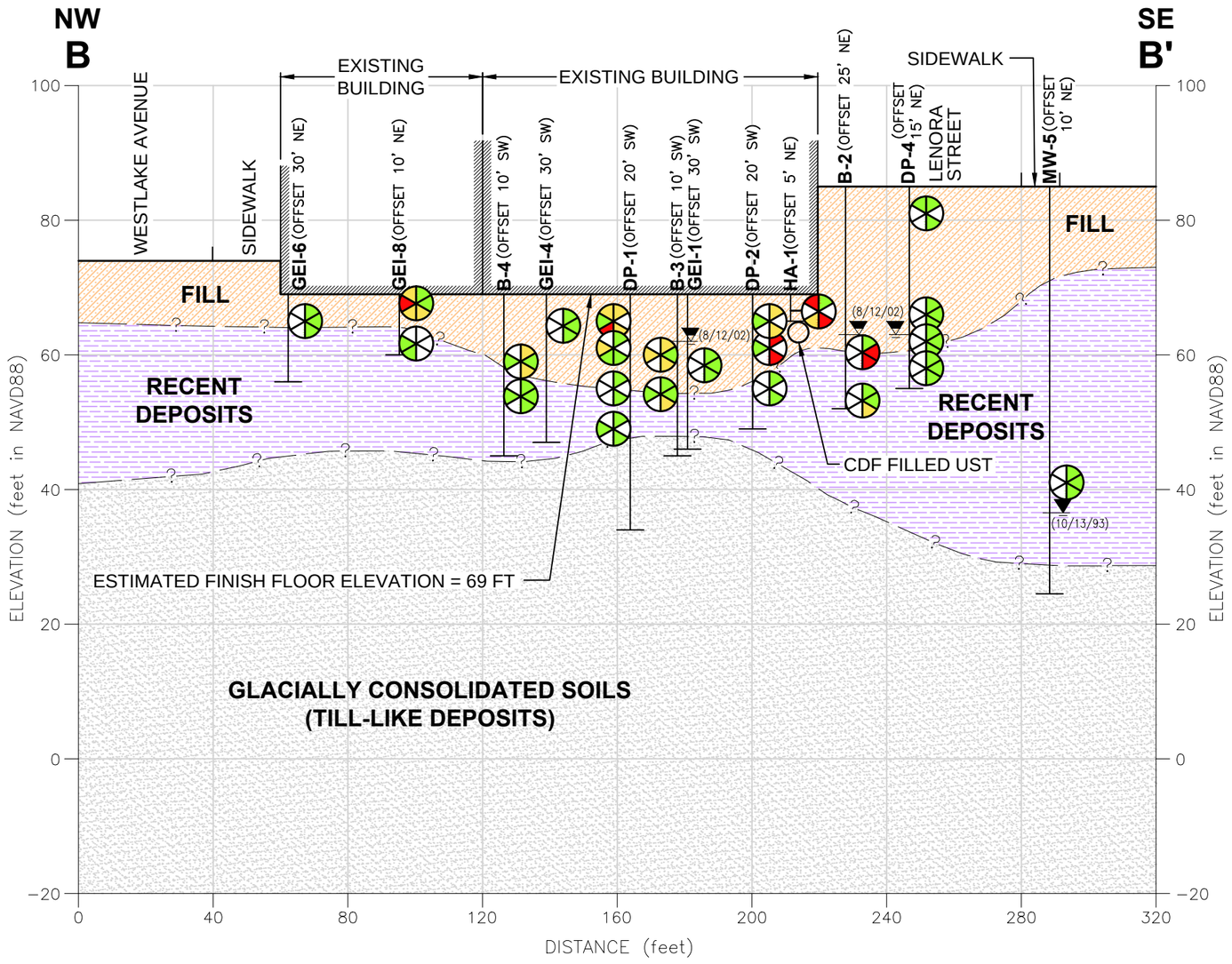
Cross Section A-A'

9th and Lenora Development
Seattle, Washington

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Figure 5

W:\Projects\21213800\103\CAD\RIFS\21I3800I03_T500_RIFS_F5_F6_F7 Cross Sections A-A' _B-B' _C-C'.dwg\TAB.F5 modified by SYI on Dec 16, 2015 - 0:21



EXPLANATION:

Chemical Analytical Results of Discrete Soil Samples

PAHs — Diesel–Range Petroleum Hydrocarbons
Metals — Gasoline–Range Petroleum Hydrocarbons
cPAHs — Heavy Oil–Range Petroleum Hydrocarbons

- Detected at a concentration greater than the MTCA Method A Cleanup Level
- Detected at a concentration less than the MTCA Method A Cleanup Level
- Metals detected at concentrations similar to Natural Background Concentrations. Other analytes not detected
- Not Analyzed

PAHs — Polycyclic aromatic hydrocarbons

cPAHs — carcinogenic PAHs

B-2 (OFFSET 25' NE) — Boring number and approximate location

Groundwater level observed in monitoring well

Perched groundwater observed during drilling

? — Soil contact

UST — Underground storage tank

CDF — Controlled density fill

Fill

Recent deposits

Glacially consolidated soils (till–like deposits)

Notes:
1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
2. Refer to Figure 3 for location of Cross Section.
3. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

40 0 40
Horizontal Scale in Feet
20 0 20
Vertical Scale in Feet
Vertical Exaggeration: 2X

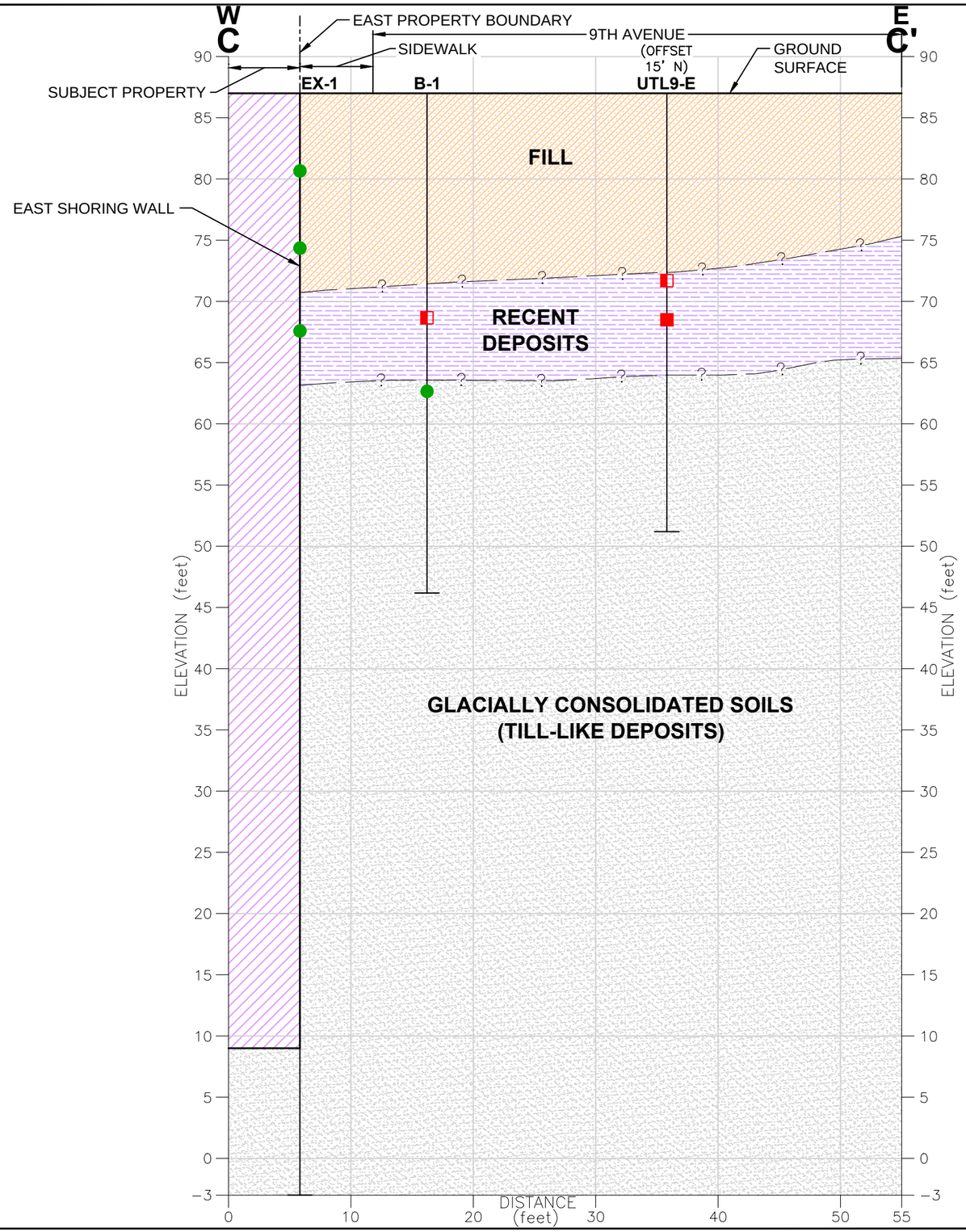
Cross Section B-B'

9th and Lenora Development
Seattle, Washington

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Figure 6

W:\PROJECTS\21\2113800\03\CAD\RIFS\2113800103_T500_RIFS_F5_F6_F7 CROSS SECTIONS A-A'_B-B'_C-C'.DWG\TAB:F6 MODIFIED BY SYI ON DEC 16, 2015 - 0:21



EXPLANATION:

- Benzene and Gasoline Detected at a concentration greater than the MTCA Method A Cleanup Level
- Benzene Detected at a concentration greater than the MTCA Method A Cleanup Level
- Gasoline and Benzene not detected

MTCA Model Toxics Control Act

(OFFSET 15' N) **UTL9-E** Sample number and approximate location

Soil contact

- Fill
- Recent deposits
- Glacially consolidated soils (till–like deposits)
- Soil at the subject property was excavated to an approximate elevation of 9 feet during mass excavation

10 0 10
Horizontal Scale in Feet

10 0 10
Vertical Scale in Feet
Vertical Exaggeration: 1X

Notes:
1. The subsurface conditions shown are based on interpolation between widely spaced explorations and should be considered approximate; actual subsurface conditions may vary from those shown.
2. Refer to Figure 3 for location of Cross Section.
3. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Cross Section C-C'

9th and Lenora Development
Seattle, Washington

GeoEngineers

Figure 7

W:\Projects\21\2113800\03\CAD\RIFS\2113800103_T500_RIFS_F5_F6_F7 Cross Sections A-A'_B-B'_C-C'.dwg\TAB:F7 Modified by SYI on Dec 18, 2015 - 1:25

APPENDICES

GeoEngineers

APPENDIX A
Field Procedures

APPENDIX A
FIELD PROCEDURES

Remedial Investigations Explorations – Soil Sample Collection and Handling

Prior to drilling activities, an underground utility locate was conducted in the area of the proposed boring locations to identify subsurface utilities and/or potential underground physical hazards. The underground utility check consisted of contacting a local utility alert service (1-call), hiring a private utility locating company, and communications with UW regarding the concrete Utility Tunnel located beneath the Site.

Subsurface conditions at the Site were evaluated by completing direct-push and/or hollow-stem auger explorations using equipment owned and operated by multiple Washington State-licensed drilling companies between 2002 and 2014. Both direct-push and hollow-stem auger drilling was conducted in general accordance with Washington Administrative Code (WAC) 173-760. Continuous soil cores were obtained from the direct push borings using 1.5-inch diameter, 5-foot long stainless steel sampler rods driven with a pneumatic hammer. Soil samples were collected in clean, plastic 1.5-inch diameter disposable liners. The liners were placed inside the sampling rod and then hydraulically driven or pushed into the soil at the selected sampling depth. Soil samples were obtained from the hollow-stem augered borings at 2.5- to 5-foot depth intervals for field screening and possible chemical analysis. Soil samples from the borings were obtained using a 2.5-inch diameter, split barrel sampler. The sampler was driven a maximum of 18 inches by a 140-pound weight falling a vertical distance of approximately 30 inches. The number of blows needed to advance the sampler the final 12 inches or other specified distance is indicated to the left of the corresponding sample notation on the boring logs. Using new disposable gloves, soil from the spit-barrel sampler was placed in clean containers provided by the testing laboratory (OnSite Environmental Inc. of Redmond, Washington). The remaining portion of the sample was placed in a plastic bag for field screening. The drilling equipment was decontaminated by steam cleaning prior to drilling each boring.

A representative from our staff selected the exploration locations and observed and classified the soil encountered. The borings were extended to approximate depths of 15 feet below the ground surface (bgs). Soil in the explorations was visually classified in general accordance with ASTM D 2488-94. The boring logs are presented in Figures A-1 through A-25.

Selected samples from the borings were submitted for chemical analysis based on field screening results. The soil samples were placed in a cooler with ice for transport to the analytical laboratory. Standard chain-of-custody procedures were followed in transporting the soil samples to the analytical laboratory.

Utility Excavation – Soil Sample Collection and Handling

Soil samples were obtained from the excavation area using a clean nitrile-gloved hand from the excavator bucket. Each sample was placed in laboratory-prepared jars and filled to minimize headspace. Gloves were changed between samples to prevent cross-contamination. The samples were placed in an iced cooler pending transport to the analytical laboratory.

Each sample submitted for chemical analysis was identified by a unique sample designation that corresponded to its mapped sample location and depth below ground surface. Chain-of-custody procedures were followed in transporting the samples to the laboratory.

Field Screening of Soil Samples

A representative from our staff performed field screening of soil samples obtained from the excavation. Field screening results are used as a general guideline to delineate areas with possible petroleum hydrocarbons. In addition, screening results are used to aid in the selection of soil samples for chemical analysis. The screening methods used include: 1) visual screening, and 2) water sheen screening.

Visual screening consists of inspecting the soil for stains indicative of petroleum hydrocarbons. Visual screening is generally more effective when hydrocarbons are heavier, such as motor oil, or when hydrocarbon concentrations are high. Water sheen screening is a more sensitive methods that can be effective in detecting contamination at concentrations less than regulatory cleanup levels. However, field screening results are site-specific. The effectiveness of field screening varies with temperature, moisture content, organic content, soil type and age of contaminant. The presence or absence of a sheen does not necessarily indicate the presence or absence of petroleum hydrocarbons.

Water sheen screening involves placing soil in water and observing the water surface for signs of sheen. Sheen screening may detect both volatile and nonvolatile petroleum hydrocarbons. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen on water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen.
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening involves placing a soil sample in a plastic bag. Air is captured in the bag, and the bag is shaken to expose the soil to the air trapped in the bag. The probe of the photoionization detector (PID) is inserted into the bag. The PID measures the concentration of photoionizable gases and vapors in the sample bag headspace. The PID is designed to quantify photoionizable gases and vapors up to 2,000 parts per million (ppm), and is calibrated with isobutylene. A lower threshold of significance of 1 ppm is used in application.

Field screening results are site- and exploration- specific. The results may vary with temperature, moisture content, soil lithology, organic content and type of contaminant. The presence or absence of sheen does not necessarily confirm the presence or absence of contaminants in a sample.

Groundwater Monitoring Well Drilling and Installation

Two monitoring wells (MW-01 and G-1) were completed at the subject property in 2013 and an off-property monitoring well (MW-5) was completed on east sidewalk of Lenora Street in 1993 to evaluate groundwater conditions and water quality at the Site. Monitoring well construction details are shown on the boring logs in this Appendix.

Protective steel monuments were installed over the wells and flush with the surrounding pavement or ground surface. The monitoring wells MW-01 and G-1 at the subject property were decommissioned by a Washington State-licensed driller in July 2015 to facilitate construction excavation.

Groundwater Monitoring Well Development

All monitoring wells except MW-01 were developed shortly after well installation to allow the sand pack to settle, remove fine soil particles from the wells and sand pack, and to establish hydraulic connection between the well and the surrounding saturated soil. Well MW-01 was observed to be dry. Prior to development, the depth to water in the well and well depth was measured and recorded. The wells were developed using a combination of surging and pumping until at least five well casing volumes were removed and turbidity of pumped water was acceptable.

Decontamination Procedures

Drilling equipment was steam cleaned before drilling each boring/well. Decontamination rinse water was collected in drums and managed as investigation waste at the time remedial investigations from 2002 to 2014.

Groundwater Sampling

The depth to groundwater in wells G-1 and MW-5 was measured relative to ground surface using an electric water level indicator inside the well casing. MW-01 was observed to be dry. The electric indicator was cleaned with a Liqui-Nox® solution wash and a distilled water rinse prior to each measurement. The depth to groundwater measurements are discussed in the report text.

Groundwater sample were obtained from monitoring wells G-1 and MW-5 using a polyvinyl chloride (PVC) bailer. Approximately three well volumes of water was purged from each well prior to collecting the groundwater samples. The groundwater samples were collected in the field in laboratory-prepared sample containers and kept cool during transport to the analytical laboratory. The sample containers were filled completely to eliminate headspace in the container. Hydrochloric acid (a preservative) was present in the bottles used for collection of water samples for analysis of petroleum hydrocarbons. Standard chain-of-custody procedures were followed in transporting the groundwater samples to the analytical laboratory.

APPENDIX B
Exploration Logs

Date(s) Drilled	7/30/2007	Logged By	HS	Checked By	DAC
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe macrocore sampler with acetate liner
Auger Data	N/A	Hammer Data	Pneumatic	Drilling Equipment	Limited access rig
Total Depth (ft)	23	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	

Depth feet	SAMPLES: Interval	SAMPLES: Recovered (in)	SAMPLES: Blows/foot	SAMPLES: Sub-Sample Number	SAMPLES: Testing	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV (ppm)	NOTES
0								CC	3 inches concrete	NS	<1	
								SM	Brown silty fine to medium sand with occasional organics (medium dense, moist)			
									Brown silty fine to medium sand (medium dense, moist)			
					CA					NS	<1	
5									Brown silty fine sand with occasional gravel (medium dense, wet)			
										NS	<1	
								ML	Bluish-gray silt (stiff, moist)			
									Gray silt (stiff, moist)	NS	<1	
10										NS	<1	
					CA				Gray silt (soft, moist)	NS	<1	
								SP	Brown fine sand (dense, moist)	NS	<1	
15								ML	Gray silt (soft, moist)	NS	<1	
										NS	<1	
								SP	Brown fine to medium sand (dense, moist)			
20										NS	<1	
										NS	<1	
									Refusal at 23 feet			
25												
30												
35												

Note: See Figure 3 for explanation of symbols.

LOG OF BORING GEI-1

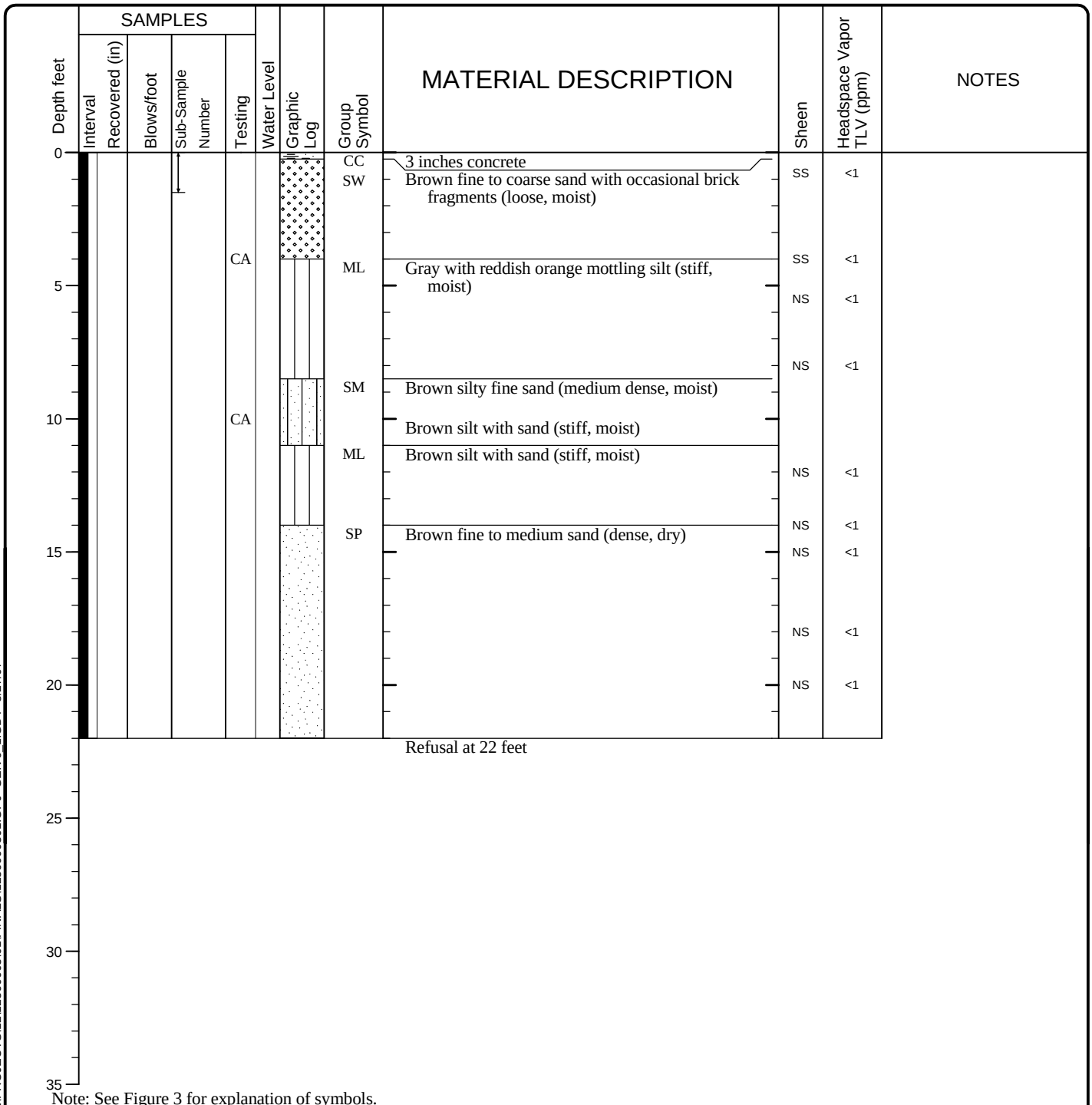
GeoEngineers

Project: 2118 Westlake Avenue and 2101 9th Avenue
Project Location: Seattle, Washington
Project Number: 12360-003-01

Figure 4
Sheet 1 of 1

V6_ENVBORING W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\1236000301.GPJ GEIV6_1.GDT 8/27/07

Date(s) Drilled	7/30/2007	Logged By	HS	Checked By	DAC
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe macrocore sampler with acetate liner
Auger Data	N/A	Hammer Data	Pneumatic	Drilling Equipment	Limited access rig
Total Depth (ft)	22	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure 3 for explanation of symbols.

LOG OF BORING GEI-2

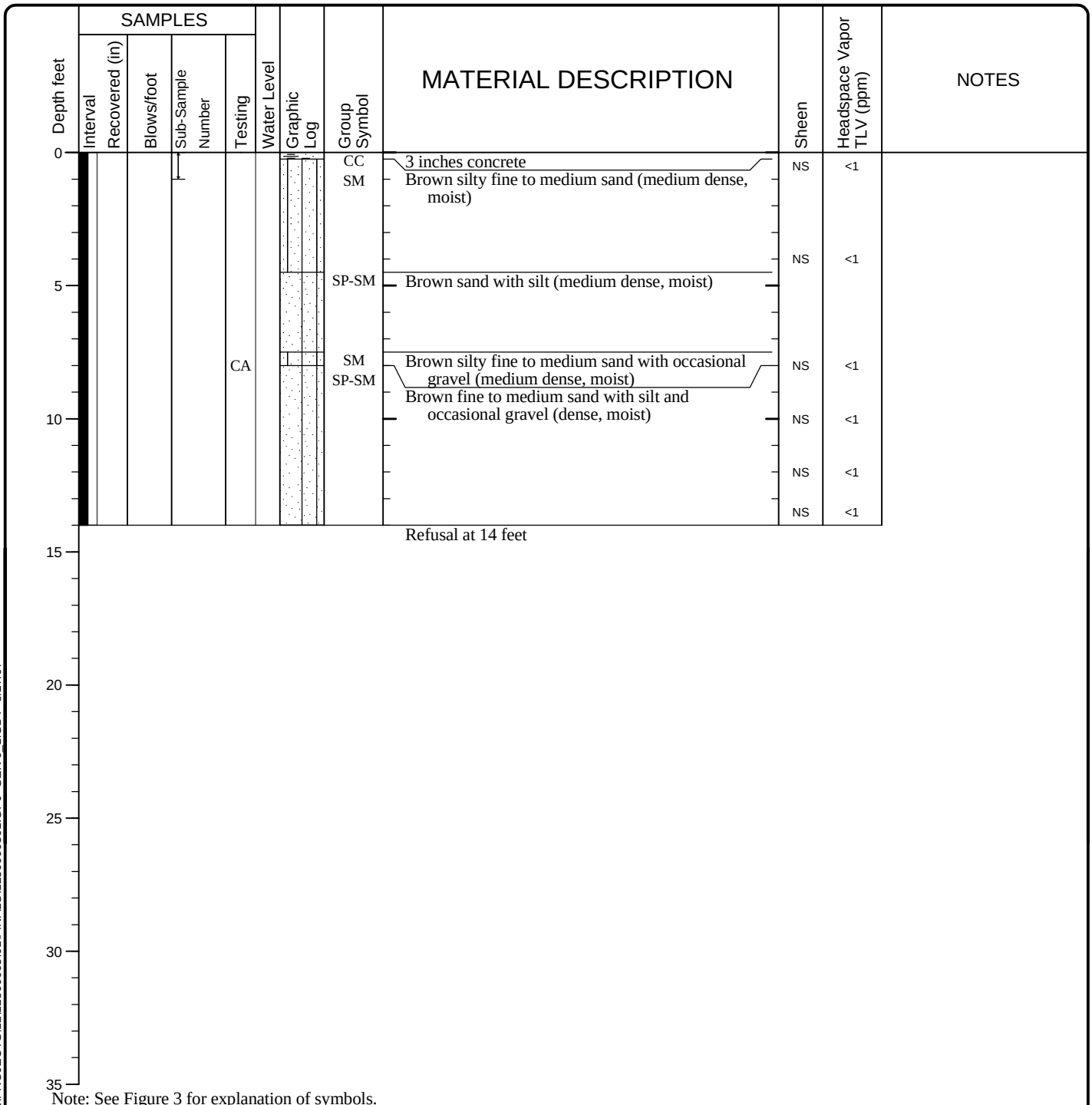
GeoEngineers

Project: 2118 Westlake Avenue and 2101 9th Avenue
Project Location: Seattle, Washington
Project Number: 12360-003-01

Figure 5
Sheet 1 of 1

V6_ENVBORING W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\1236000301.GPJ GEIV6_1.GDT 8/27/07

Date(s) Drilled	7/30/2007	Logged By	HS	Checked By	DAC
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe macrocore sampler with acetate liner
Auger Data	N/A	Hammer Data	Pneumatic	Drilling Equipment	Limited access rig
Total Depth (ft)	14	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure 3 for explanation of symbols.

LOG OF BORING GEI-3

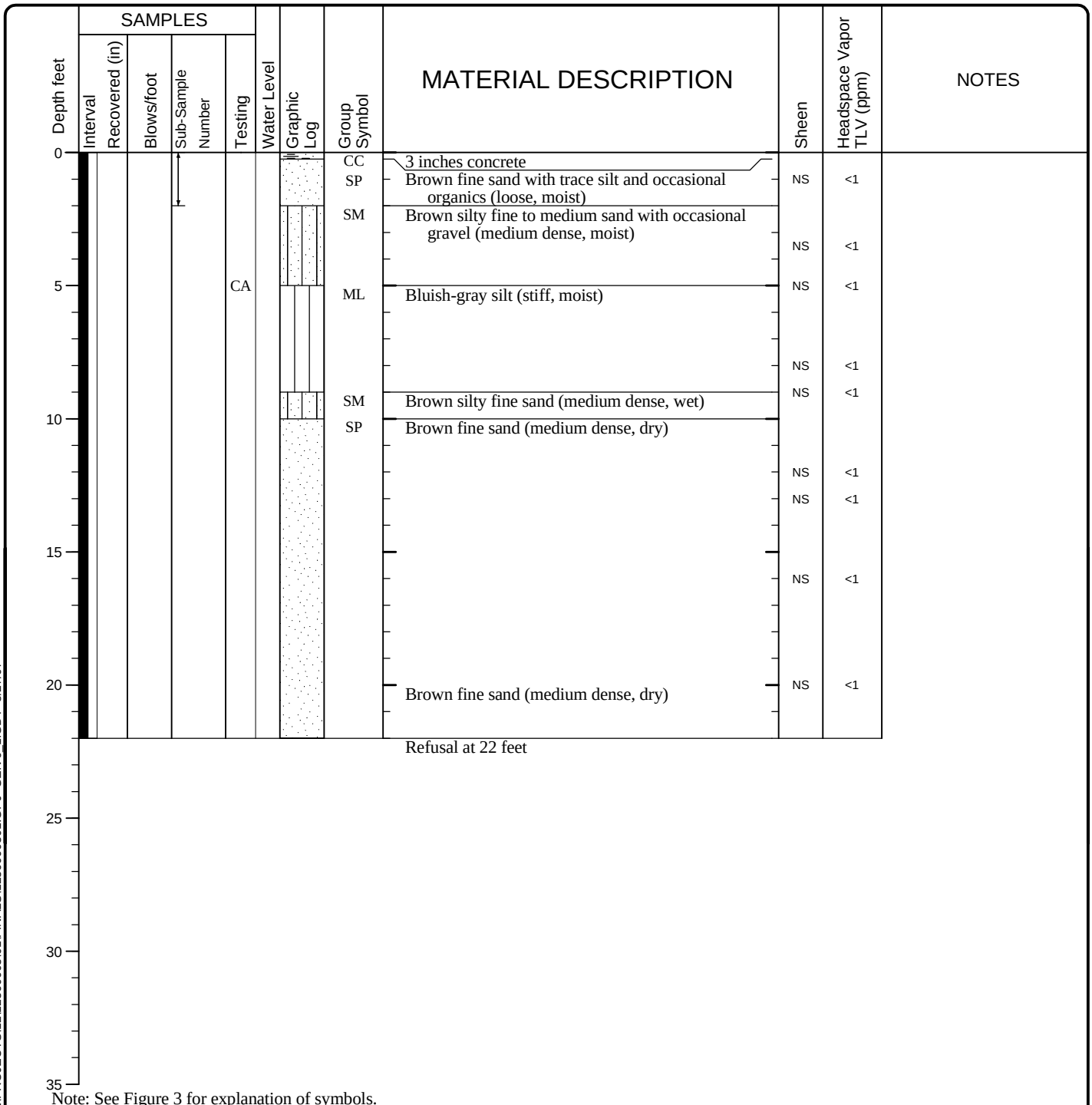
GeoEngineers

Project: 2118 Westlake Avenue and 2101 9th Avenue
Project Location: Seattle, Washington
Project Number: 12360-003-01

Figure 6
Sheet 1 of 1

V6_ENVBORING W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\1236000301.GPJ GEIV6_1.GDT 8/27/07

Date(s) Drilled	7/30/2007	Logged By	HS	Checked By	DAC
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe macrocore sampler with acetate liner
Auger Data	N/A	Hammer Data	Pneumatic	Drilling Equipment	Limited access rig
Total Depth (ft)	22	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure 3 for explanation of symbols.

LOG OF BORING GEI-4

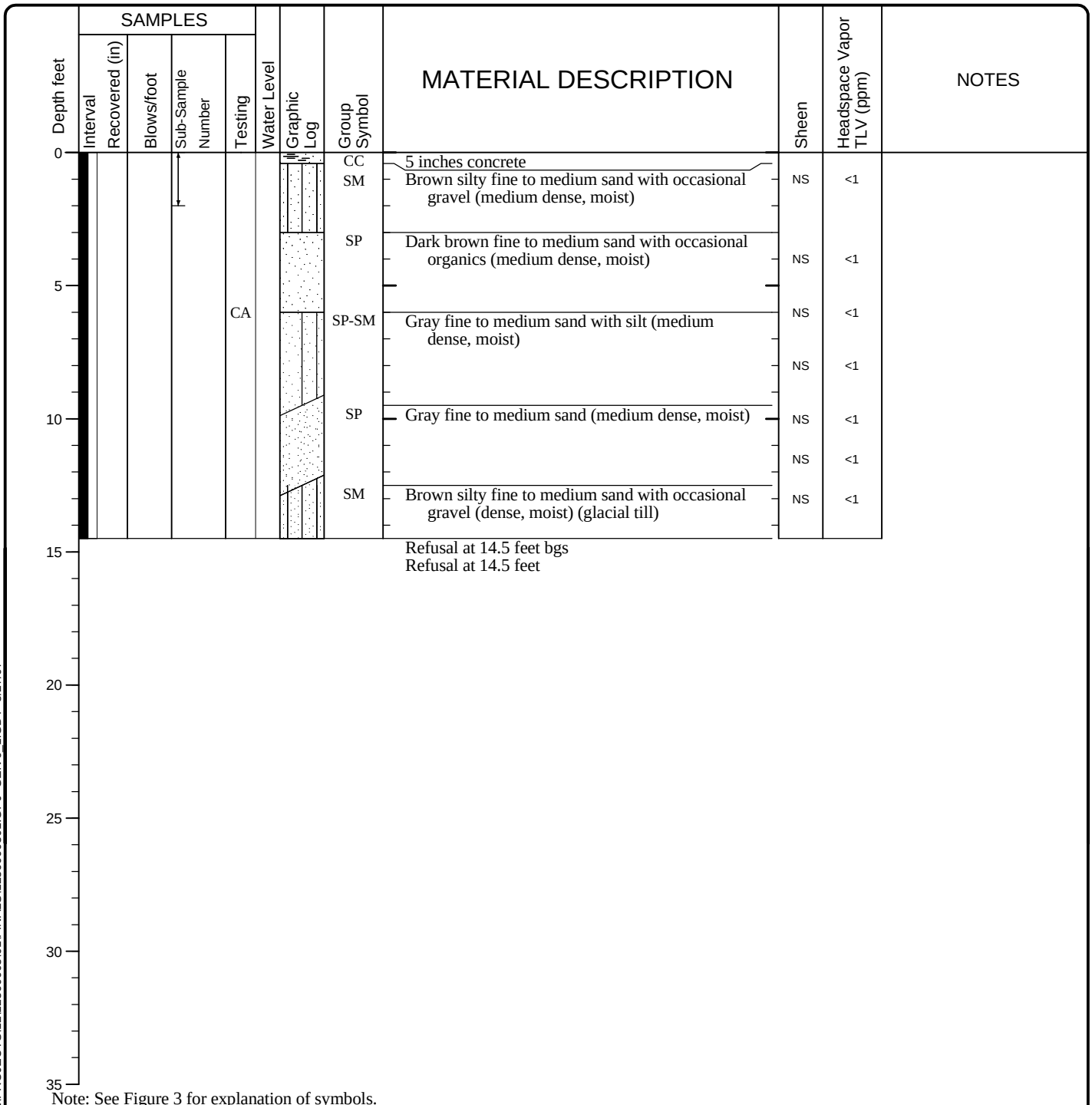
GeoEngineers

Project: 2118 Westlake Avenue and 2101 9th Avenue
Project Location: Seattle, Washington
Project Number: 12360-003-01

Figure 7
Sheet 1 of 1

V6_ENVBORING W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\1236000301.GPJ GEIV6_1.GDT 8/27/07

Date(s) Drilled	7/30/2007	Logged By	HS	Checked By	DAC
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe macrocore sampler with acetate liner
Auger Data	N/A	Hammer Data	Pneumatic	Drilling Equipment	Limited access rig
Total Depth (ft)	14.5	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure 3 for explanation of symbols.

LOG OF BORING GEI-5

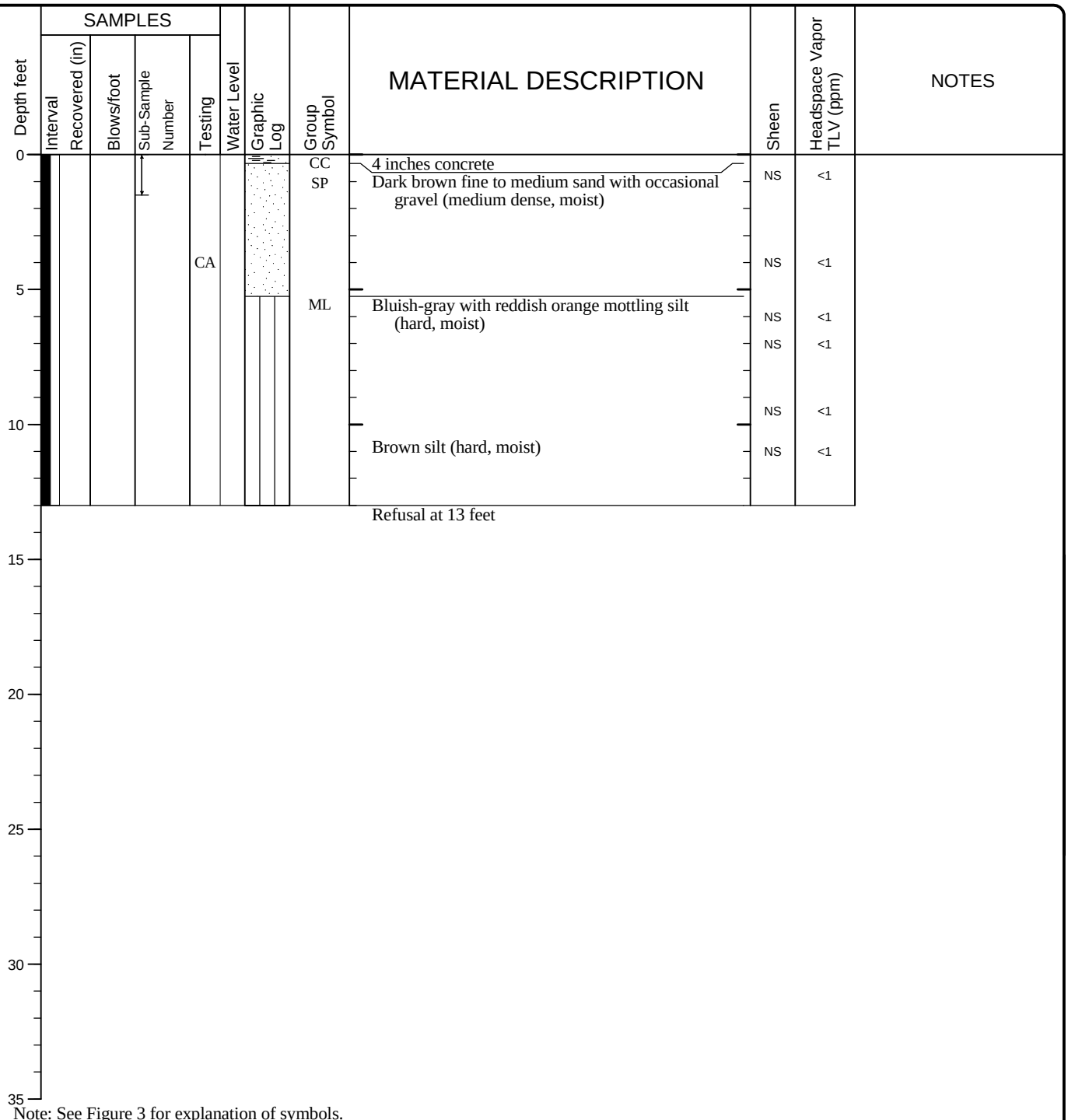
GeoEngineers

Project: 2118 Westlake Avenue and 2101 9th Avenue
Project Location: Seattle, Washington
Project Number: 12360-003-01

Figure 8
Sheet 1 of 1

V6_ENVBORING W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\1236000301.GPJ GEIV6_1.GDT 8/27/07

Date(s) Drilled	7/30/2007	Logged By	HS	Checked By	DAC
Drilling Contractor	ESN Northwest	Drilling Method	Direct Push	Sampling Methods	Geoprobe macrocore sampler with acetate liner
Auger Data	N/A	Hammer Data	Pneumatic	Drilling Equipment	Limited access rig
Total Depth (ft)	13	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Not Encountered
Vertical Datum		Datum/ System		Easting(x): Northing(y):	



Note: See Figure 3 for explanation of symbols.

LOG OF BORING GEI-6

GeoEngineers

Project: 2118 Westlake Avenue and 2101 9th Avenue
Project Location: Seattle, Washington
Project Number: 12360-003-01

Figure 9
Sheet 1 of 1

V6_ENVBORING W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\1236000301.GPJ GEIV6_1.GDT 8/27/07

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	32	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Approximately 24
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	6 inches concrete			
							SP-SM	Gray fine to medium sand with silt (medium dense, moist)	NS	<100	
									NS	<100	
5							SM	Gray silty fine sand (medium dense, moist)	NS	<100	
									NS	<100	
							ML	Gray silt with trace fine sand (stiff, moist)	NS	<100	
10									NS	<100	
									SS	<100	
15									SS	<100	
		CA							MS	<100	
20							SM	Gray silty fine sand with occasional gravel (very dense, moist	SS	<100	
									SS	<100	
		CA			▽		SP-SM	Gray fine to medium sand with silt and occasional wood pieces (dense, moist)	SS	<100	
25							ML	Gray silt (stiff, moist)	SS	<100	
									SS	<100	
							SP-SM	Gray fine to medium sand with silt (medium dense, wet)	SS	<100	
							ML	Gray silt (stiff, moist)			
30									NS	<100	
									NS	<100	

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-1

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 10
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	33	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Approximately 22
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	6 inches concrete			
							SM	Brown gray fine to medium sand with trace silt (medium dense, moist)	NS	<100	
									NS	<100	
5									NS	<100	
							ML	Gray silt with fine to medium sand (stiff, moist)	SS	<100	
									SS	<100	
10							SP	Brown fine to medium sand with trace silt (medium dense, moist)	NS	<100	
									SS	<100	
15									NS	<100	
							SM	Gray silty fine sand (dense, moist)	NS	<100	
							SM	Gray brown silty fine to medium sand (medium dense, moist)	NS	<100	
20					▽				SS	<100	
		CA					SP-SM	Gray fine to medium sand with silt (dense, moist)	HS	400	
25									HS	200	
							ML	Gray green mottled silt (very stiff, moist)	SS	<100	
									MS	<100	
30								Gray silt (very stiff, moist)	SS	<100	
		CA									

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-2

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 11
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Approximately 7
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown gray silty fine to medium sand with occasional gravel and pieces of wood (medium dense, moist)	SS	<100	
									SS	<100	
5									HS	100	
					▽		ML	Gray silt (stiff, moist)			
		CA							HS	200	
10									HS	100	
									HS	150	
								Grades to green			
		CA							HS	100	
15							SP-SM	Gray fine sand with silt (medium dense, moist)	MS	<100	
							ML	Gray silt (very stiff, moist)			
									MS	<100	
									SS	<100	
20							SP-SM	Brown fine sand with trace silt (medium dense, moist)	NS	<100	
							SM	Gray silty fine sand (very dense, moist)	NS	<100	

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-3

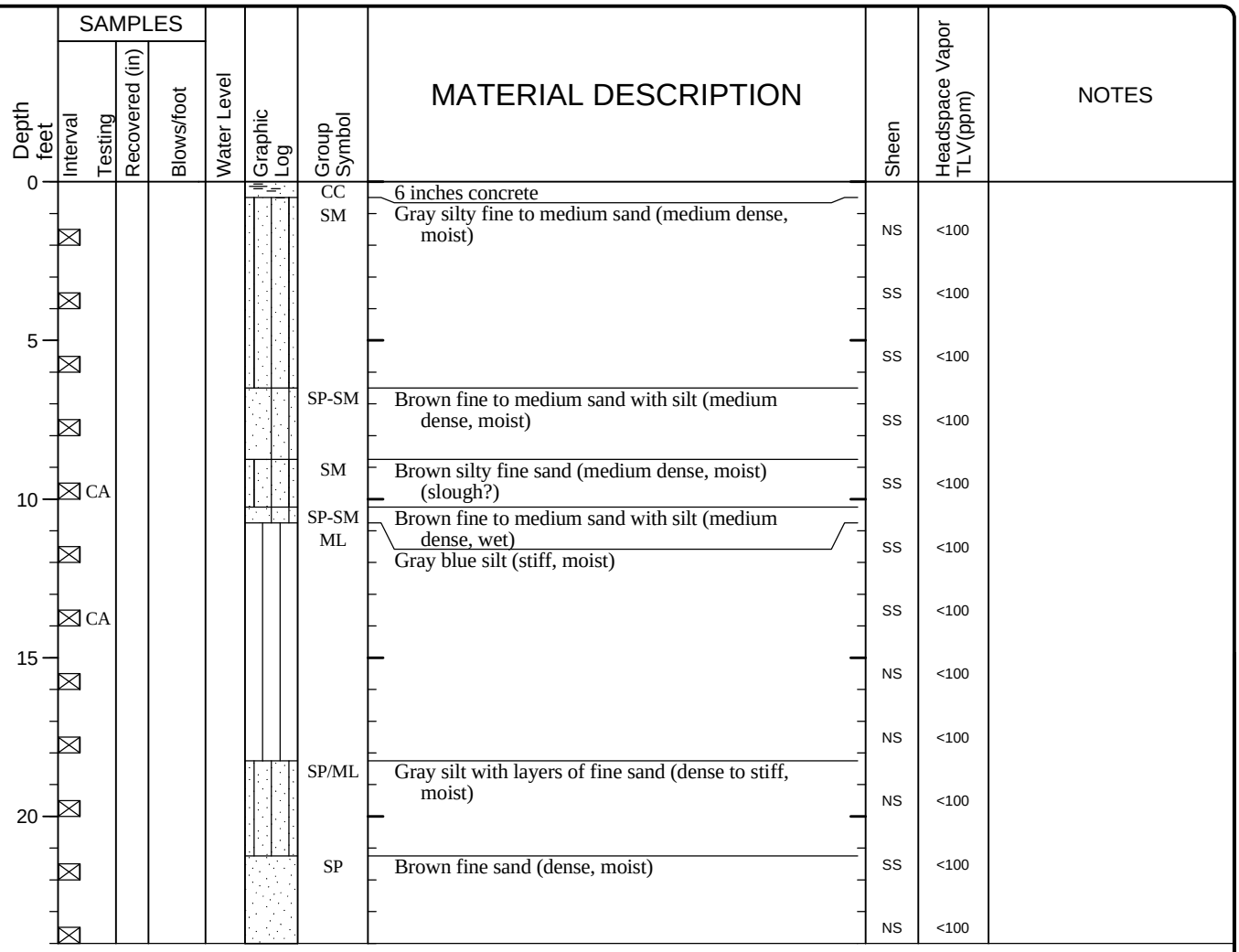
GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 12
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					



Note: See Figure 3 for explanation of symbols

LOG OF BORING B-4

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 13
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	13
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Gray silty fine to medium sand with occasional gravel (medium dense, moist)	SS	<100	
								Grades to dark brown black silty fine sand with wood	SS	<100	
5								Grades to dark gray with occasional gravel	SS	100	
							ML	Gray silt with wood pieces (medium stiff, moist)	MS	400	
							SM	Gray silty fine to medium sand with free product (medium dense, moist)	HS	200	
10		CA					ML	Gray silt with trace fine sand (stiff, moist)	HS	100	
							SM	Gray fine sand with silt (medium dense, wet)	HS	<100	
							ML	Gray silt (stiff, moist)	MS	<100	
15							SP-SM	Gray fine sand with silt (dense, moist)	MS	<100	
							ML	Gray silt (stiff, moist)	NS	<100	
20											

Note: See Figure 3 for explanation of symbols

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

LOG OF BORING B-5

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 14
Sheet 1 of 1

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<100	
									NS	<100	
5							SM	Gray silty fine to medium sand with occasional gravel (medium dense, moist)	SS	<100	
								Rock in sampler	--	--	
							ML	Gray silty with trace fine sand (stiff, moist)	SS	<100	
10		CA							SS	<100	
								Grades to medium stiff, wet	SS	<100	
15									SS	<100	
								Grades to brown			
							SP	Gray fine sand with trace silt (dense, moist)	SS	<100	
20									SS	<100	
							SP-SM	Gray fine to medium sand with silt (dense, moist)	NS	<100	
									NS	<100	

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-6

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 15
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<100	
		CA							SS	<100	
5									NS	<100	
								Grades to gray brown silty fine sand (dense, moist)			
								Grades to gray	NS	<100	
10									NS	<100	
							SP-SM	Gray fine sand with silt (dense, moist)	NS	<100	
								Grades to brown	NS	<100	
15									NS	<100	
								Grades to gray fine to medium sand with silt	NS	<100	
20							SP-SM	Gray fine to medium sand with silt and occasional gravel (medium dense, moist)	NS	<100	

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-7

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 16
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (loose, moist)	NS	<100	
									SS	<100	
5							SP-SM	Brown fine to medium sand with silt and occasional gravel (medium dense, moist)	NS	<100	
		CA							NS	<100	
							SM	Gray silty fine sand with occasional gravel (dense, moist)	NS	<100	
10							ML	Gray silt (stiff, moist)			
							SP-SM	Gray fine sand with silt (dense, moist)	NS	<100	
									NS	<100	
15								Grades to moist to wet	NS	<100	
							SP	Gray fine sand with trace silt (very dense, moist)	NS	<100	
20							SP	Brown fine sand with trace silt (very dense, moist)	NS	<100	
									NS	<100	
									NS	<100	

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-8

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 17
Sheet 1 of 1

8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	12	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	6 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<100	
									NS	<100	
5									NS	<100	
		CA						Grades to gray silty fine sand with trace gravel (dense, moist)	SS	<100	
									NS	<100	
10								Grades to without trace gravel	NS	<100	

Note: See Figure 3 for explanation of symbols

LOG OF BORING B-9

GeoEngineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: 18
Sheet 1 of 1

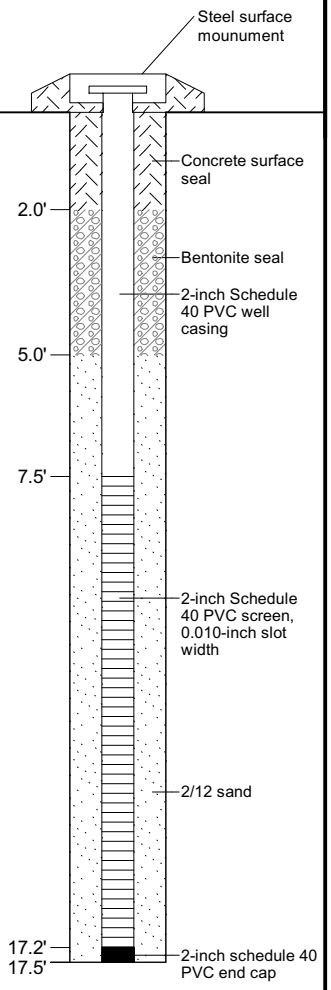
8022-004-00 GEI_ENVBORING_2.1.0 W:\SEATTLE\PROJECTS\12\12360003\01\FINALS\802200400.GPJ GEIV2_2.GDT 8/27/07

Drilled Start 7/16/2013 End 7/16/2013	Total Depth (ft) 23	Logged By CRB Checked By	Driller Cascade Drilling	Drilling Method Direct Push	
Hammer Data N/A		Drilling Equipment Geoprobe 54LT		DOE Well I.D.: BIC 621 A 2 (in) well was installed on 7/16/2013 to a depth of 17.5 (ft).	
Surface Elevation (ft) Vertical Datum Undetermined		Top of Casing Elevation (ft)		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)	
Easting (X) Northing (Y)		Horizontal Datum			
Notes:					

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)
	0		36						CC	8 inches concrete slab		
									SP	Brown moist silty sand with gravel		<1
												<1
						MW-01-3.0 CA					SS	
	5		50						ML	Black silt with sand (ash?) (burned appearance)	NS	
						MW-01-6.0					NS	
									ML	Brown to gray silt with sand, trace fine gravel (native)		<1
						MW-01-8.0					NS	
												<1
	10		48						CL	Gray clay (moist)	NS	
						MW-01-12.0			ML	Brown sandy silt with scattered fine gravel	NS	<1
									SP	Brown poorly graded fine to medium sand with thin interbedded lenses of silt (moist)		
	15		20			MW-01-15.0					NS	<1
									SM	Brown silty sand (moist)		<1
						MW-01-19.0					NS	
	20										NS	<1
						MW-01-23.0						<1

Refusal at 23 feet

WELL LOG



Note: See Figure A-1 for explanation of symbols.

Log of Monitoring Well MW-01

GeoEngineers

Project: Cornish College - 9th and Lenora
Project Location: Seattle, Washington
Project Number: 8022-012-00

Figure A-2
Sheet 1 of 1

Seattle: Date:7/30/13 Path:C:\USERS\KJANC\DESKTOP\80220120O.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_WELL

Drilled Start 7/16/2013 End 7/16/2013	Total Depth (ft) 7	Logged By CRB Checked By	Driller Cascade Drilling	Drilling Method Direct Push
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data N/A	Drilling Equipment 7730 DI-Geoprobe	
Easting (X) Northing (Y)		System Datum	Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)	
Notes:				

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		22						SM	Black silty sand with gravel, burned debris, brick fragments, wood chunks (moist)		<1	
						GEI-7-2.0				(burned appearance)	SS	<1	
			14										
						GEI-7-4.0 CA				Becomes gray and lacks wood (fill)	SS	<1	
	5												
			12			GEI-7-6.0 CA			SM	Brown silty sand (moist) (native)	NS	<1	
										Refusal at 7 feet			

Note: See Figure A-1 for explanation of symbols.

Log of Boring GEI-7

GeoEngineers

Project: Cornish College - 9th and Lenora
Project Location: Seattle, Washington
Project Number: 8022-012-00

Figure A-3
Sheet 1 of 1

Seattle: Date:7/30/13 Path:C:\USERS\KJANC\DESKTOP\80220120O.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start 7/16/2013	End 7/16/2013	Total Depth (ft) 9	Logged By CRB / Checked By	Driller Cascade Drilling	Drilling Method Direct Push
Surface Elevation (ft) / Vertical Datum	Undetermined		Hammer Data	N/A	Drilling Equipment	Geoprobe 54LT
Easting (X) / Northing (Y)			System Datum		Groundwater: Date Measured	Depth to Water (ft) / Elevation (ft)
Notes:						

Elevation (feet) / Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample / Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
0							CC	5 inches concrete			
				GEI-8-1.0 CA			SM	Brown silty fine to coarse sand with gravel, burned appearance; orange weathering (moist)	SS	<1	
		14		GEI-8-3.0				Grades with increased silt content, perched water (fill)	NS	<1	
5							ML	Gray silt with sand and fine sand interbeds; orange weathering (moist) (native)	NS	<1	
		30		GEI-8-7.0 CA				Trace fine gravel, angular, bedding	NS	<1	
								Refusal at 9 feet			

Note: See Figure A-1 for explanation of symbols.

Log of Boring GEI-8

GeoEngineers

Project: Cornish College - 9th and Lenora
Project Location: Seattle, Washington
Project Number: 8022-012-00

Figure A-4
Sheet 1 of 1

Seattle: Date:7/30/13 Path:C:\USERS\KJANC\DESKTOP\80220120O.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	2/27/2012	2/27/2012	85.5	TML	HPD	Geologic Drill Exploration, Inc.	Hollow Stem Auger

Hammer Data	Rope & Cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment	Diedrich D50
Surface Elevation (ft) Vertical Datum	81 NAVD88	Top of Casing Elevation (ft)	80.70
Easting (X) Northing (Y)		Horizontal Datum	

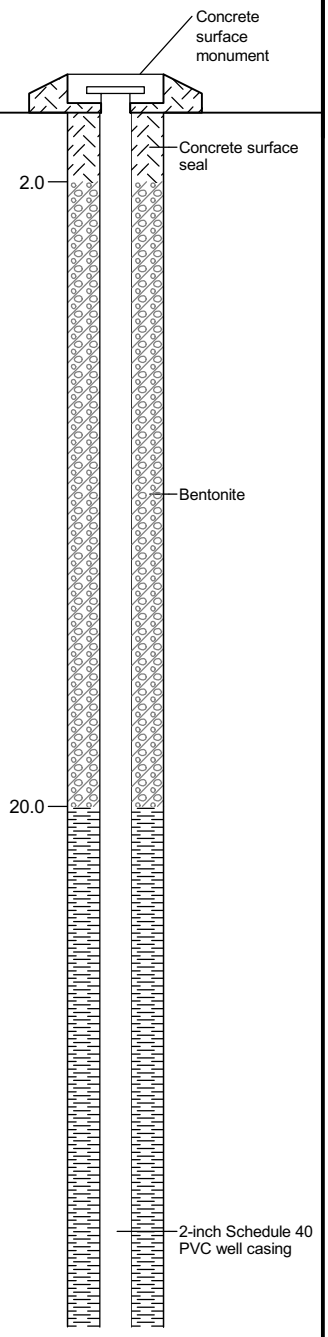
Licensing agency well number: **BHJ178**
A 2 (in) well was installed on 2/27/2012 to a depth of 84.75 (ft).

Groundwater Date Measured	Depth to Water (ft)	Elevation (ft)
3/9/2012	59.9	21.10

Notes:

Elevation (feet)	Depth (feet)	Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)
80	0							AC	2 inches asphalt		
		6			1			SM	Brown silty fine to medium sand with gravel and debris (wood, brick) (moist) (fill)		
		10	12		2 CA			SM	Dark brown silty fine to medium sand with gravel (loose to medium dense, moist)		
75	5	10	5		3 CA				(Charcoal fragments, moist)		
		12	8		4 CA			SM	Light brown silty fine to medium sand with occasional gravel (loose, moist) (brick fragments)		
70	10	22	6		5				(Wood debris)		
		24	12		6			ML	Light brown silt with sand and occasional fine to medium sand layers (stiff, moist) (orange mottling)		
65	15	19	17		7 CA			SM	Light brown silty fine to medium sand (medium dense, moist) (recent deposits)		
			16		8			SP-SM	Yellowish brown fine to coarse sand with silt (medium dense, moist)		
60	20	18	28		9 %F				(MC = 18%; %F = 7)		
		14	11		10				Becomes grayish brown		
55	25	5	17		11			SM	Gray-brown silty fine to medium sand (medium dense, moist) (Driller noted cobbles)		
50	30	16	87/10"		12			SM	Grayish brown silty fine to medium sand with gravel (very dense, moist) (till-like deposits)		
	35										

WELL LOG



Note: See Figure A-1 for explanation of symbols.

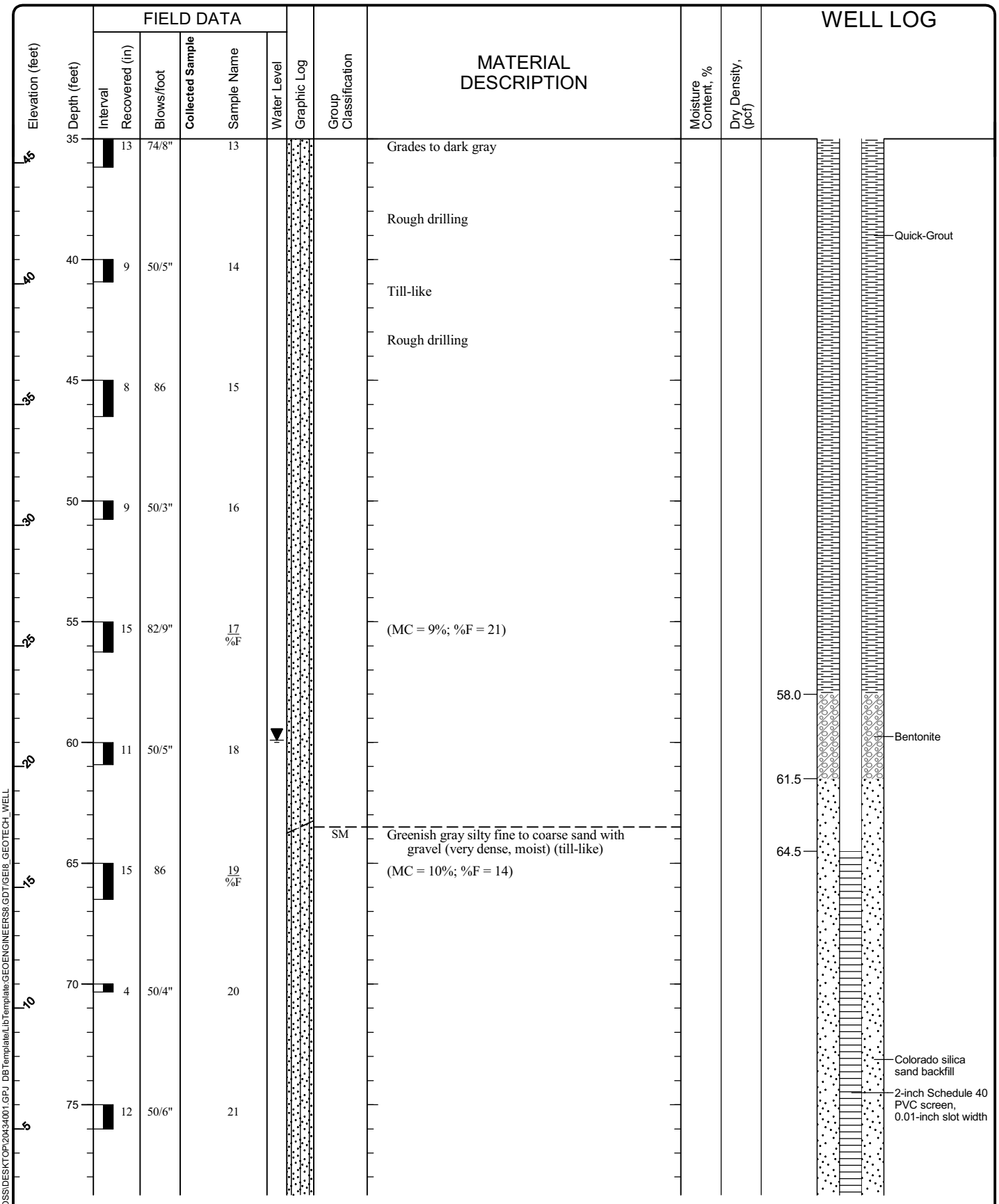
Log of Monitoring Well MW20-3

GeoEngineers

Project: Rufus 2.0 Development
Project Location: Seattle, Washington
Project Number: 20434-001-02

Figure A-19
Sheet 1 of 3

Seattle: Date:5/7/12 Path:C:\USERS\CVOSS\DESKTOP\20434001.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_WELL



Note: See Figure A-1 for explanation of symbols.

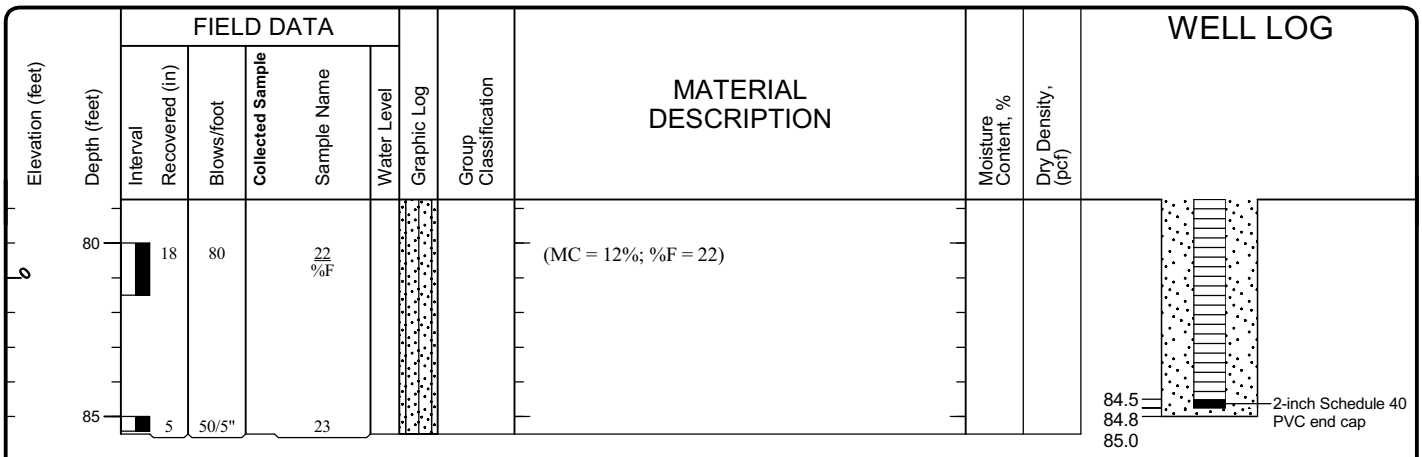
Log of Monitoring Well MW20-3 (continued)

GeoEngineers

Project: Rufus 2.0 Development
Project Location: Seattle, Washington
Project Number: 20434-001-02

Figure A-19
Sheet 2 of 3

Seattle: Date:5/7/12 Path:C:\USERS\CVOSS\DESKTOP\20434001.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_WELL



Note: See Figure A-1 for explanation of symbols.

Log of Monitoring Well MW20-3 (continued)

GeoEngineers

Project: Rufus 2.0 Development
Project Location: Seattle, Washington
Project Number: 20434-001-02

Figure A-19
Sheet 3 of 3

Seattle: Date:5/7/12 Path:C:\USERS\CVOSS\DESKTOP\20434001.GPJ DBTemplate\LibTemplate:GEOENGINEERS8.GDT/GEI8_GEOTECH_WELL

Drilled	Start 2/27/2012	End 2/27/2012	Total Depth (ft)	76	Logged By / Checked By	CB / HPD	Driller	Geologic Drill Exploration, Inc.	Drilling Method	Hollow Stem Auger
Surface Elevation (ft) / Vertical Datum	80.5 NAVD88		Hammer Data	Rope & Cathead 140 (lbs) / 30 (in) Drop	Drilling Equipment	Diedrich D50				
Easting (X) / Northing (Y)			System Datum		Groundwater	Date Measured: 2/27/2012	Depth to Water (ft): 50.0	Elevation (ft): 30.5		
Notes:										

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)	REMARKS
80	0						AC	1 inch asphalt			
							SM	Dark brown silty fine to medium sand with gravel and occasional silt pockets and asphalt fragments (moist) (fill)			
		6 / 11	3	1 / 2			ML	Brown silt with sand, gravel and trace organics (soft to medium stiff, moist)			
75	5	10	6	3 / CA				With black weathering and debris			
		10	9	4 / CA			ML	Dark gray sandy silt with brick fragments (stiff, moist)			
70	10		10	5 / CA			ML	Brown sandy silt with occasional gravel (stiff to very stiff, moist)			
		8	31	6 / CA							Brick fragments
65	15	15	21	7 / CA			ML	Grayish brown silt with sand (stiff to very stiff, moist)			
		10	11	8				With trace sand, becomes moist to wet			
60	20	10	19	9 / CA	▽		SM	Grayish brown silty fine to medium sand (medium dense, wet) (recent deposits)			
		6	32	10 / CA							
55	25	10	99	11 / CA			SM	Grayish brown silty fine to medium sand wityh gravel and occasional interbedded silt layers (very dense, moist) (till-like deposits)			Rough drilling
		13	55	12							
50	30	13	89/7"	13			SM	Grayish brown silty fine to medium sand with occasional gravel (very dense, moist)			Rough drilling Orange mottling
	35						SM	Grayish brown silty fine to coarse sand with occasional gravel (very dense, moist)			

Note: See Figure A-1 for explanation of symbols.

Seattle: Date:5/7/12 Path:C:\USERS\CVOSS\DESKTOP\20434001.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_STANDARD

Log of Boring B20-3

GeoEngineers

Project: Rufus 2.0 Development
Project Location: Seattle, Washington
Project Number: 20434-001-02

Figure A-22
Sheet 1 of 2

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)	REMARKS
	35												MC = 11%; %F = 22
			10	50/4"		14 %F							
									SM	Dark gray silty fine to coarse sand with gravel (very dense, moist)			
	40		3	50/3"		15							Rough drilling Till-like
	45		5	50/5"		16 %F							Rough drilling MC = 8%; %F = 20
	50		6	50/6"		17 %F/CA	▽			Becomes wet			Rough drilling MC = 13%; %F = 23
									SM	Dark gray silty fine to medium sand with gravel (very dense, moist to wet)			
	55		17	91/11"		18							Rough drilling Till-like
	60		16	91/10"		19				Becomes orange-brown			
									SM	Gray silty fine to coarse sand with occasional gravel (very dense, moist)			
	65		10	50/4"		20 %F							Orange weathering MC = 14%; %F = 33
	70		3	50/3"		21							Rough drilling
	75		7	50/4"		22			SM	Orange-brown silty fine to medium sand with gravel (very dense, moist to wet)			

Note: See Figure A-1 for explanation of symbols.

Log of Boring B20-3 (continued)

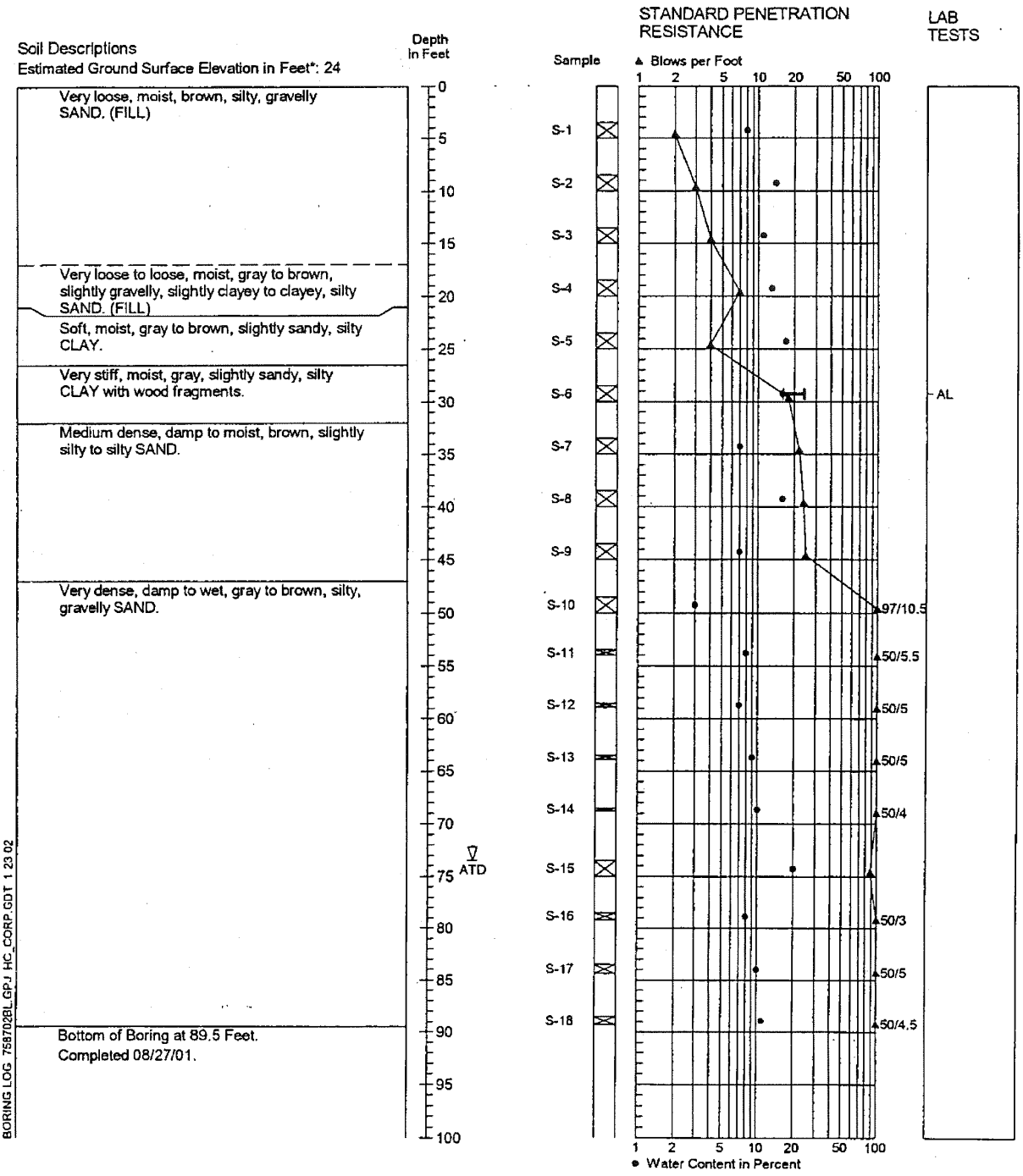
GeoEngineers

Project: Rufus 2.0 Development
Project Location: Seattle, Washington
Project Number: 20434-001-02

Figure A-22
Sheet 2 of 2

Seattle Date:5/7/12 Path:C:\USERS\CVOSS\DESKTOP\20434001.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_STANDARD

Boring Log HC-4A



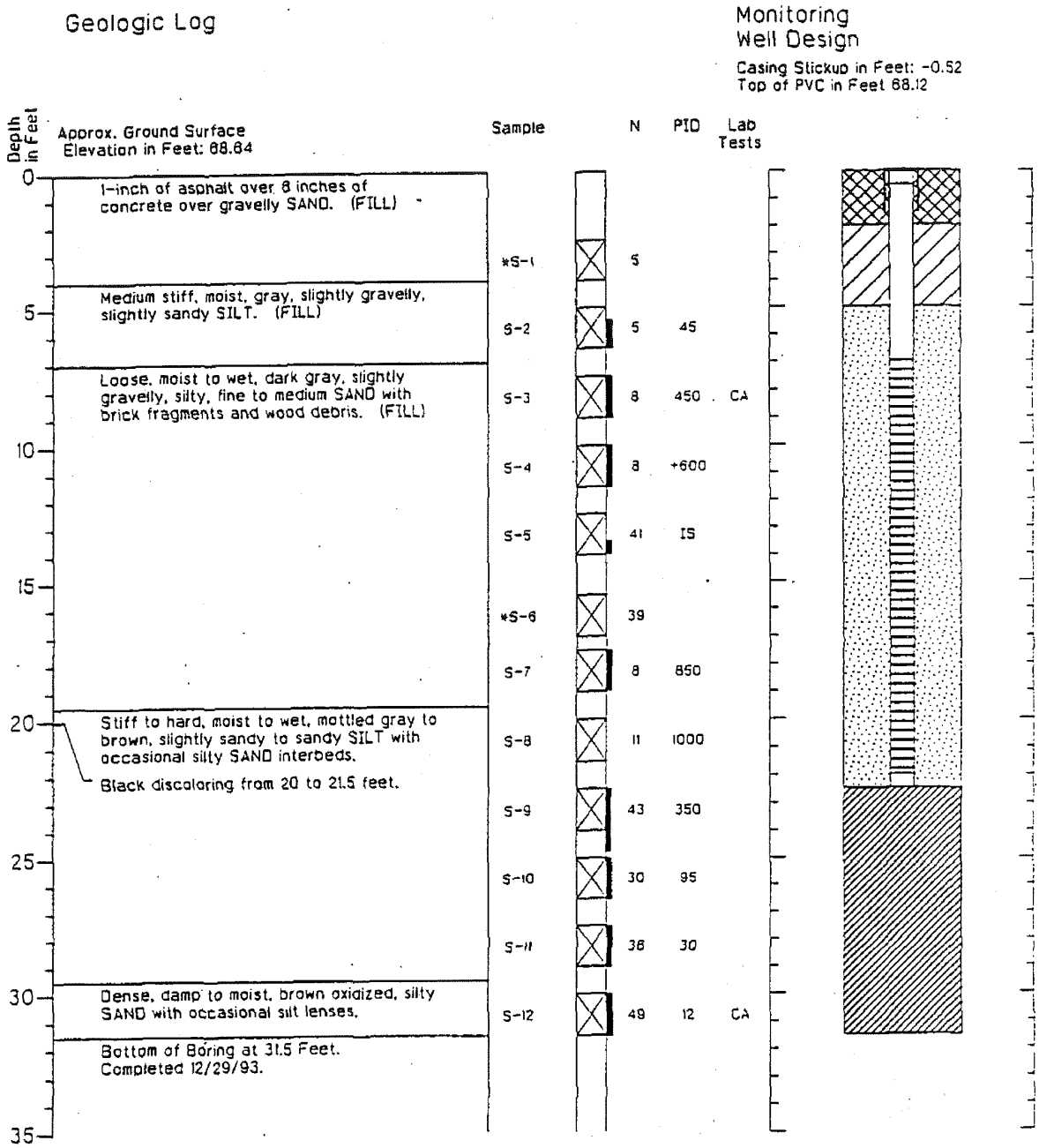
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. * Elevations are Project Datum.

HARTCROWSER

7587-02 08/01

Figure A-5

Boring Log and Construction Data for Monitoring Well HC-1



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

HARTCROWSER

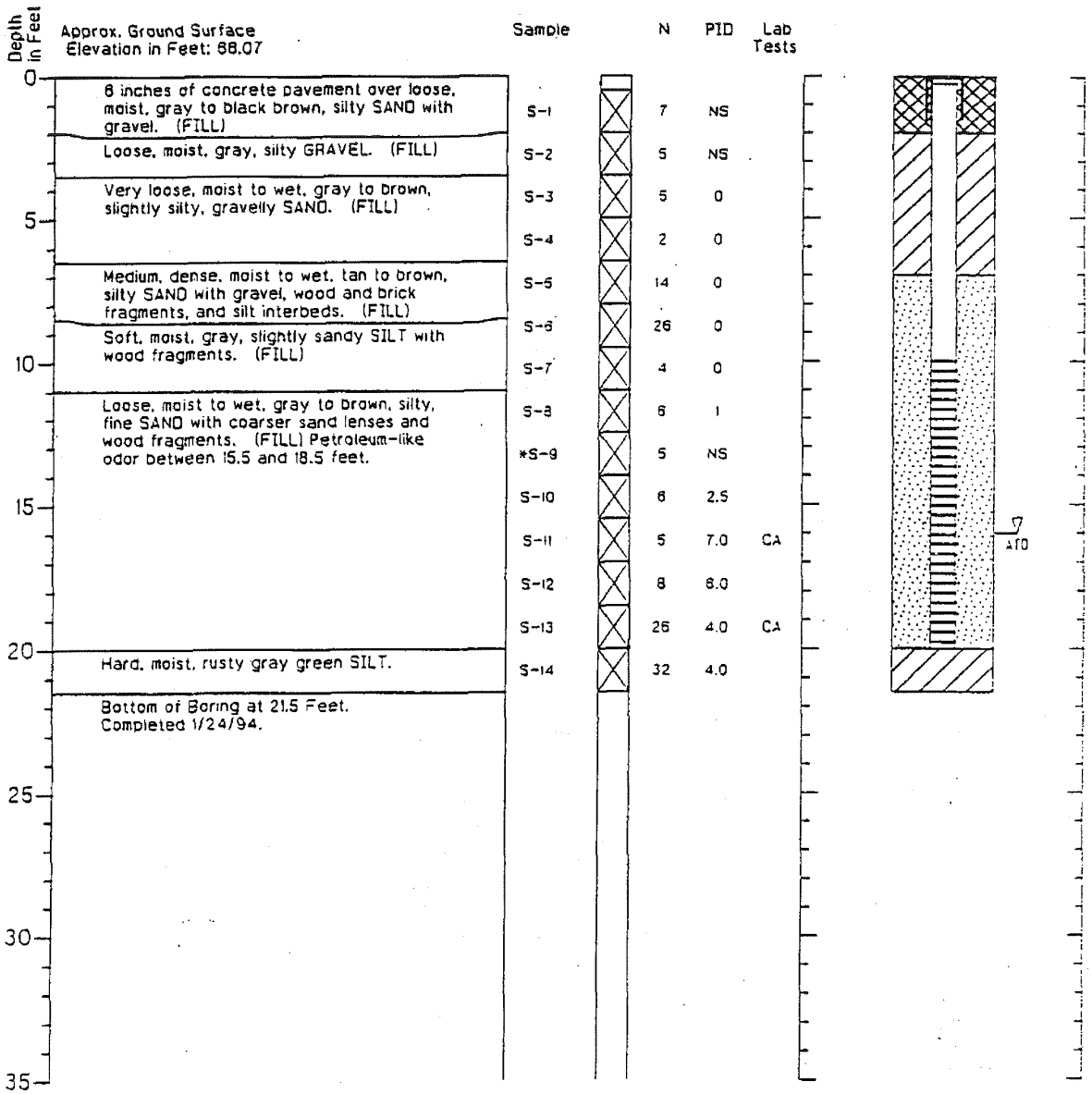
3866-02 12/93
7587-02 1/02
Figure A-7

Boring Log and Construction Data for Monitoring Well HC-5

Geologic Log

Monitoring Well Design

Casing Stickup in Feet: -0.25
Top of PVC in Feet 65.82

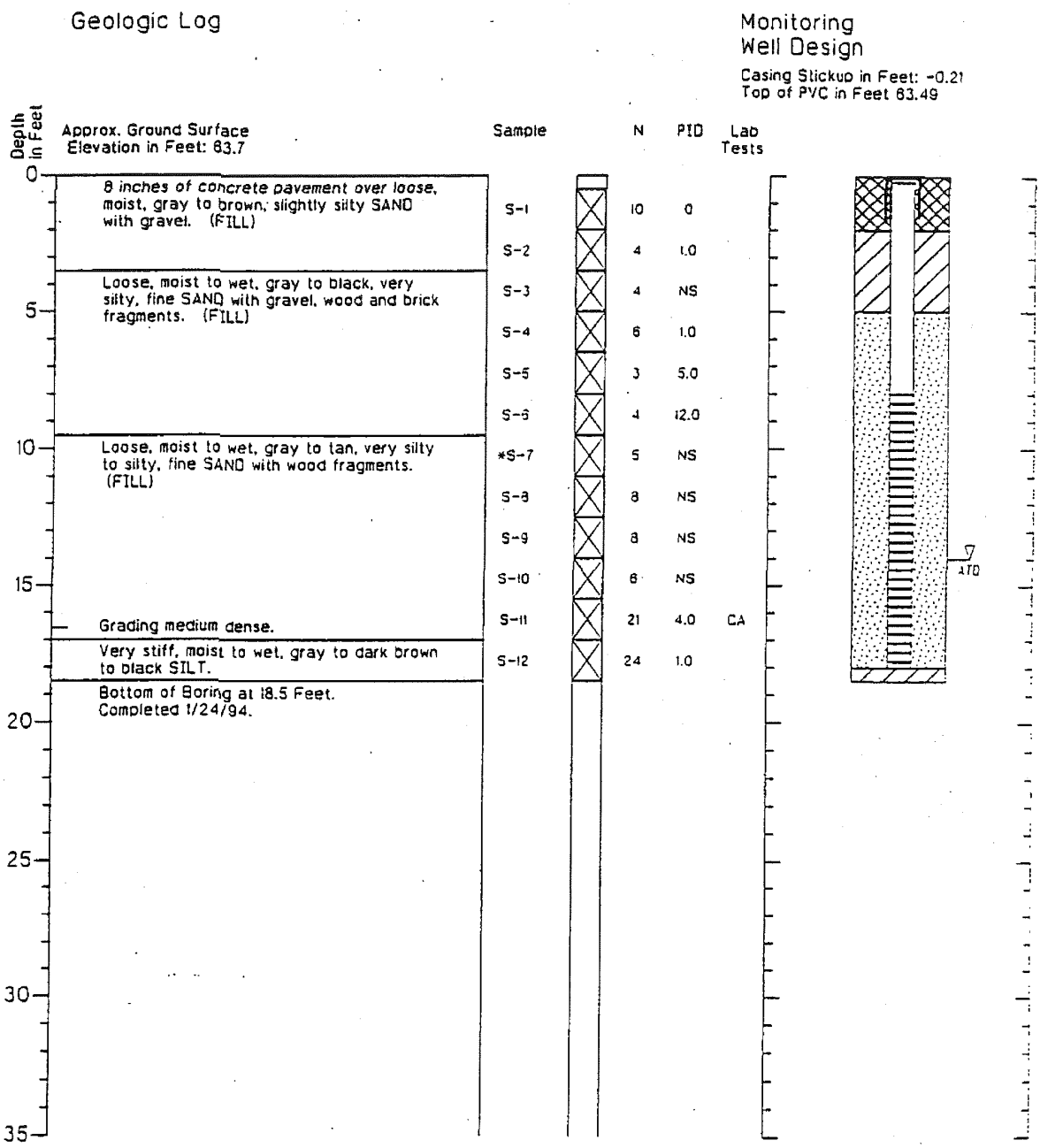


1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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3866-02 1/94
7587-02 1/02
Figure A-11

Boring Log and Construction Data for Monitoring Well HC-6



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

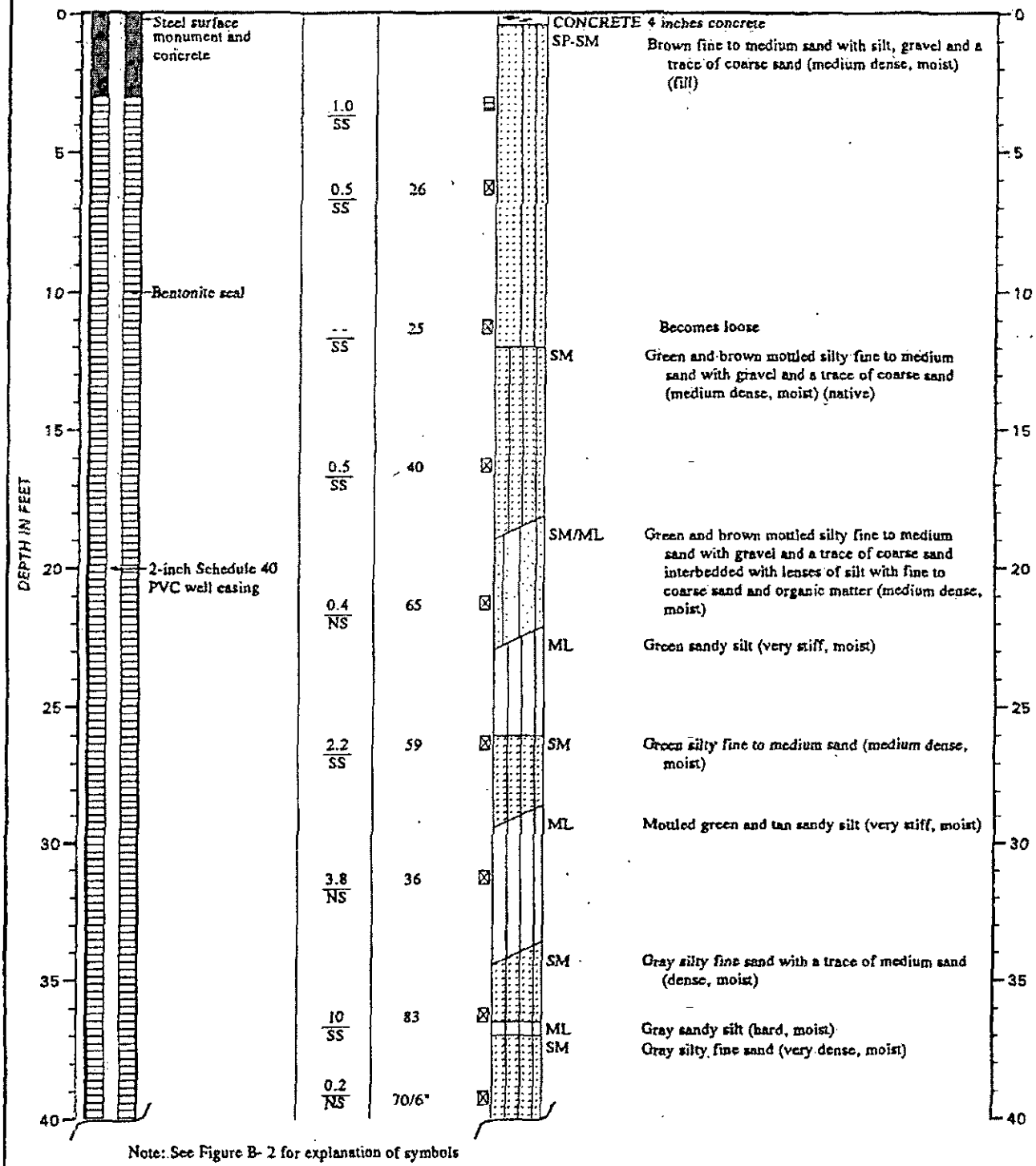
HARTCROWSER

3866-02 1/94
7587-02 1/02
Figure A-12

MONITORING WELL MW-5

WELL SCHEMATIC

Casing Elevation (ft.): 75.77
Casing Stickup (ft.): -0.25



Note: See Figure B- 2 for explanation of symbols

SCW:CMS 4/17/98

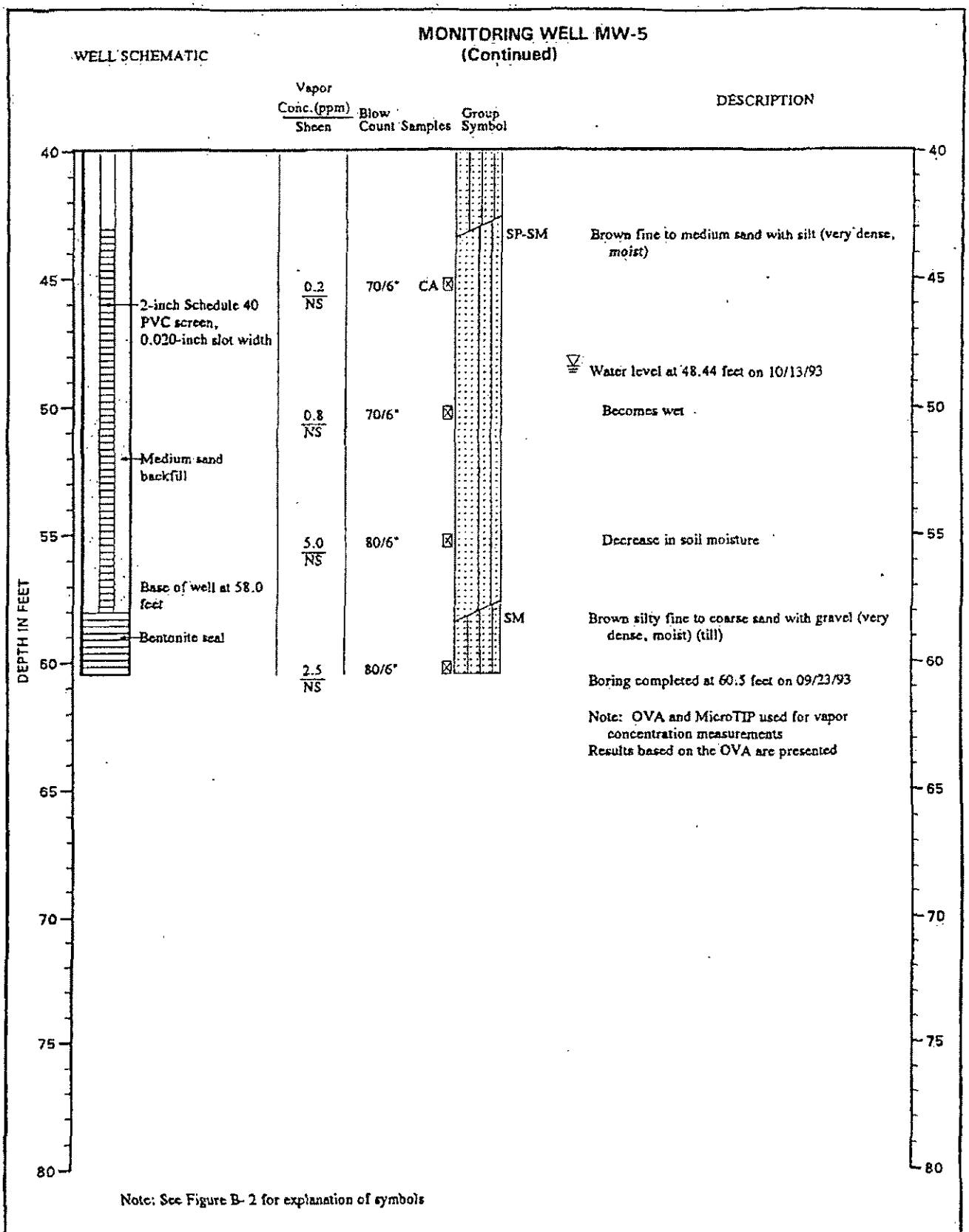
2720-002-R2B

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LOG OF MONITORING WELL

FIGURE B-6

MONITORING WELL MW-5
(Continued)



Note: See Figure B- 2 for explanation of symbols

:SCW:CMS 4/17/98

2720-002-R2B

Geo Engineers

LOG OF MONITORING WELL

FIGURE B-6

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE A-1

Drilled Start 12/19/2013 End 12/19/2013	Total Depth (ft) 21	Logged By CEW Checked By MWS	Driller Boretec, Inc.	Drilling Method Hollow-Stem Auger
Surface Elevation (ft) Vertical Datum 69		Hammer Data Rope & Cathead 140 (lbs) / 30 (in) Drop		Drilling Equipment EC55 Track-Mounted Drill Rig
Easting (X) Northing (Y)		System Datum		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)
Notes:				

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0						CC	12-inches portland cement concrete			
							SM	Brown silty fine to medium sand with occasional gravel (loose to medium dense, moist) (fill)			
65		3	10					No sample taken at 2.5 feet, too little recovery	NS	<1	No odor
	5	12	13	1				Wood debris in sample	NS	<1	No odor
							SM	Brown silty fine to medium sand (medium dense, moist) (fill)			
		3	16					No sample taken at 7.5 feet, too little recovery	SS	<1	No odor
60							SM	Light brown silty fine sand (medium dense, moist)			
	10	16	16	2 CA					SS	<1	No odor
							SM	Brown silty fine sand with occasional gravel (medium dense, moist)			
		11	16					Wood fragments and organic matter in sample No sample taken at 12.5 feet, too little recovery			
55							SM	Brown silty fine to medium sand with gravel (dense to very dense, moist) (glacially consolidated soils)			
	15	11	34	3					NS	<1	No odor
		15	79/9"					Becomes till-like	NS	<1	No odor
50											
	20	11	79					No sample taken at 20 feet bgs			

Note: See Figure A-1 for explanation of symbols.

Log of Boring G-1

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-2
Sheet 1 of 1

Redmond: Date:1/23/14 Path:\\RED\PROJECTS\21\21138001\GINT\21138000100.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled Start 12/20/2013 End 12/20/2013	Total Depth (ft) 21.5	Logged By CEW Checked By MWS	Driller Boretec, Inc.	Drilling Method Hollow-Stem Auger
Surface Elevation (ft) Vertical Datum 69		Hammer Data Rope & Cathead 140 (lbs) / 30 (in) Drop		Drilling Equipment EC55 Track-Mounted Drill Rig
Easting (X) Northing (Y)		System Datum		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)
Notes:				

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0						CC	9½ inches portlant cement concrete			
							SM	Grayish brown silty fine to medium sand with gravel (medium dense, moist) (fill)			
65		15	13	1					NS	<1	No odor
	5	9.5	8	2 CA					NS	<1	No odor Wood debris in sample
							CL	Grayish brown lean clay (very stiff, moist) (recent deposits)			
60		14	17	3					NS	<1	No odor
	10	8	15	4					NS	<1	No odor Wood debris in sample
							SM	Grayish silty fine sand (medium dense, moist)			
		9	21	5					NS	<1	No odor Wood debris and 5 inches of organic matter in sample
55							ML	Grayish brown silt (very stiff, moist to wet)			
	15	14	22	6					NS	<1	No odor Perched groundwater encountered at approximately 15 feet
							SP	Brown and orange-brown silty fine sand (medium dense, moist)			
50		16	25	7					NS	<1	No odor
	20	16	39				SP	Light brown silty fine sand (dense, moist) (glacially consolidated soils) No sample taken at 20 feet bgs			

Note: See Figure A-1 for explanation of symbols.

Redmond: Date:1/23/14 Path:\\RED\PROJECTS\21\21138001\GINT\21138001GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Log of Boring G-2

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-3
Sheet 1 of 1

Drilled Start 12/20/2013 End 12/20/2013	Total Depth (ft) 20	Logged By CEW Checked By WLT	Driller Cascade Drilling LP	Drilling Method Continuous
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data		Drilling Equipment Geoprobe 7730DT
Easting (X) Northing (Y)		System Datum		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)
Notes:				

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0		38						CC	10 inches concrete			
									SM	Dark brown with light brown lenses silty fine to medium sand with occasional gravel (medium dense, moist)			
						1					NS	<1	No odor
	5		60			2					NS	<1	No odor
										Trace organics (wood) encountered at 7 feet			Perched groundwater encountered from 6.5 to 9 feet
						3					NS	<1	No odor
									ML	Dark gray/black silt with trace fine sand (medium dense, moist)			
	10		60			4			ML	Ligh gray silt with trace fine sand (medium dense, moist)	NS	<1	No odor
						5 CA					SS	<1	No odor
									SP-SM	Gray fine to medium sand with trace silt (medium dense, wet)			Perched groundwater encountered from 14 to 19 feet
									ML	Gray-brown silt with trace fine sand (medium dense, wet)			
	15		60			6					NS	<1	No odor
									SP-SM	Gray fine to medium sand with trace silt (medium dense, moist)			
						7			ML	Gray silt with trace fine sand (medium dense, moist)	NS	<1	No odor
									SP-SM	Orange-brown lenses of fine to medium sand (dense, moist)			
									ML	Gray silt with trace fine sand (medium dense, moist)			
						8			SP-SM		NS	<1	No odor
	20									Gray-light brown fine to medium sand with trace silt (loose, moist)			

Note: See Figure A-1 for explanation of symbols.

Log of Boring E-1

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-5
Sheet 1 of 1

Redmond: Date:1/23/14 Path:\\RED\PROJECTS\21\21138001\GINT\21138000100.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled Start 12/20/2013 End 12/20/2013	Total Depth (ft) 20	Logged By CEW Checked By WLT	Driller Cascade Drilling LP	Drilling Method Continuous
Surface Elevation (ft) Vertical Datum Undetermined		Hammer Data		Drilling Equipment Geoprobe 7730DT
Easting (X) Northing (Y)		System Datum		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)
Notes:				

Elevation (feet) / Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
0		35						CC	10 inches of concrete			
								SM	Dark brown silty fine to coarse sand with trace gravel (dense, moist) Bits of metal at approximately 1 foot Black lense from 1 to 2 feet			
					1 CA					NS	<1	No odor
5		48			2					NS	<1	No odor
					3							
								ML	Dark gray/brown silt with trace fine sand (dense, moist)			
10		55			4					NS	<1	No odor
									Light gray silt with trace fine sand (dense, moist) Native soil at approximately 12 feet			
					5			SP-SM	Light gray sand with occasional silt (dense, moist)	NS	<1	No odor
								ML	Light gray silt with trace fine sand (dense, moist)			
								SP-SM	Light gray sand with silt (dense, moist)			Overburden caused plug to jam in sampler
15		52			6			ML	Light gray silt with trace fine sand (dense, moist)	NS	<1	No odor
					7					NS	<1	No odor
								SP-SM	Light brown with orange mottling fine sand with silt (dense, moist)			
					8					NS	<1	No odor
20												

Note: See Figure A-1 for explanation of symbols.

Log of Boring E-2

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-4
Sheet 1 of 1

Redmond: Date:1/23/14 Path:\\RED\PROJECTS\21\21138001\GINT\21138000100.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE A-1

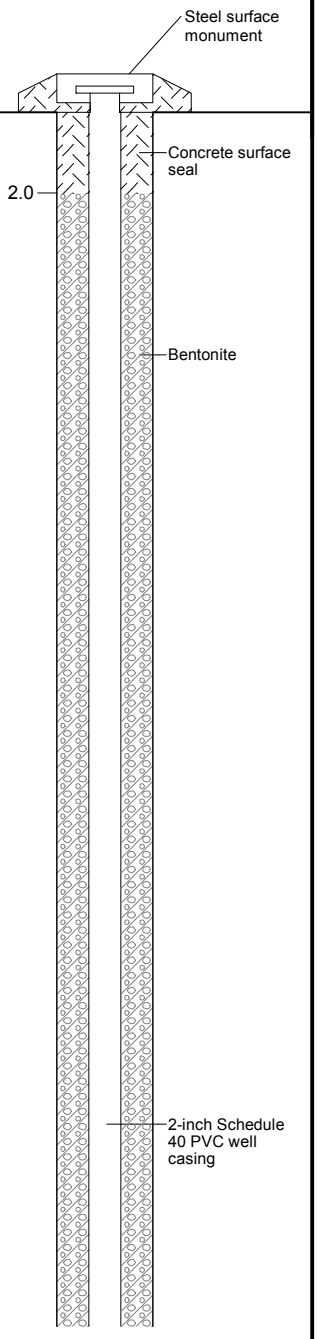
Drilled	Start 12/19/2013	End 12/19/2013	Total Depth (ft) 80.5	Logged By CEW / Checked By MWS	Driller Boretec, Inc.	Drilling Method Hollow-Stem Auger

Hammer Data: Rope & Cathead, 140 (lbs) / 30 (in) Drop	Drilling Equipment: EC55 Track-Mounted Drill Rig	DOE Well I.D.: BHZ-904 A 2 (in) well was installed on 12/19/2013 to a depth of 80 (ft).	
Surface Elevation (ft) Vertical Datum: 69.17	Top of Casing Elevation (ft): 68.87	Groundwater	
Easting (X) Northing (Y)	Horizontal Datum	Date Measured: 12/27/2013	Depth to Water (ft): 53.3 / Elevation (ft): 15.9

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample	Sample Name	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)
	0							CC	12-inches portland cement concrete		
								SM	Brown silty fine to medium sand with occasional gravel (loose to medium dense, moist) (fill)		
65		3	10		1						
	5	12	13		2				Wood debris in sample		
								SM	Brown silty fine to medium sand (medium dense, moist) (recent deposits)		
		3	16		3						
60								SM	Light brown silty fine to medium sand (medium dense, moist)		
	10	16	16		4 %F				%F = 16	11	
								SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)		
		11	16		5 %F				Wood fragments and organic matter in sample %F = 14	12	
55								SM	Brown silty fine to medium sand with gravel (dense to very dense, moist) (glacially consolidated soils)		
	15	11	34		6						
		15	79/9"		7				Till-like		
50											
	20	11	79		8						
45											
	25	11	77/11"		9						
								SM	Brown silty fine to medium sand with gravel and occasional cobbles (very dense, moist) (till-like)		
40									Rough drilling		
	30										

WELL LOG



Note: See Figure A-1 for explanation of symbols.

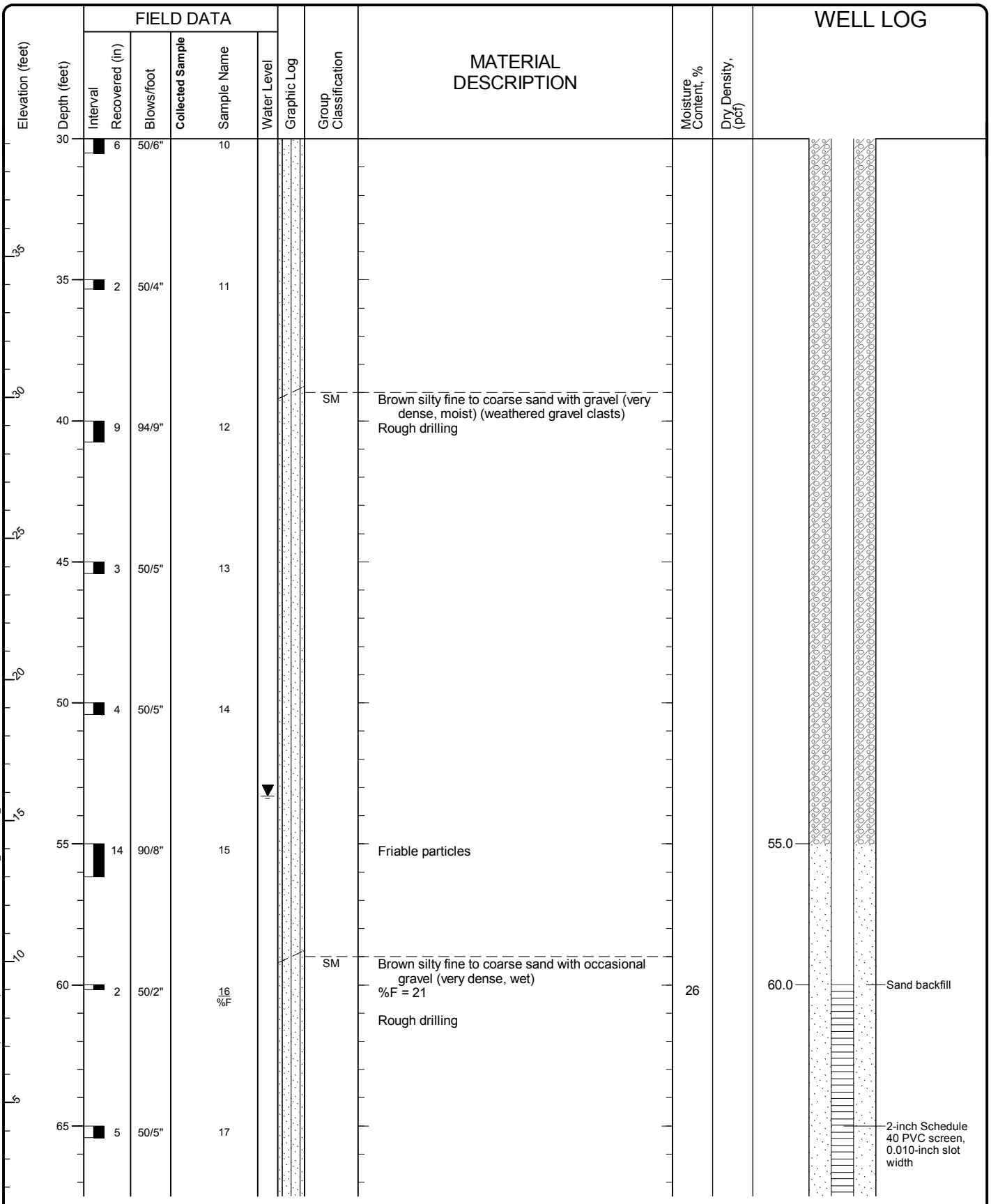
Redmond: Date:7/1/14 Path:C:\USERS\KJANC\DESKTOP\21138000100.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_WELL

Log of Boring G-1

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-2
Sheet 1 of 3



Note: See Figure A-1 for explanation of symbols.

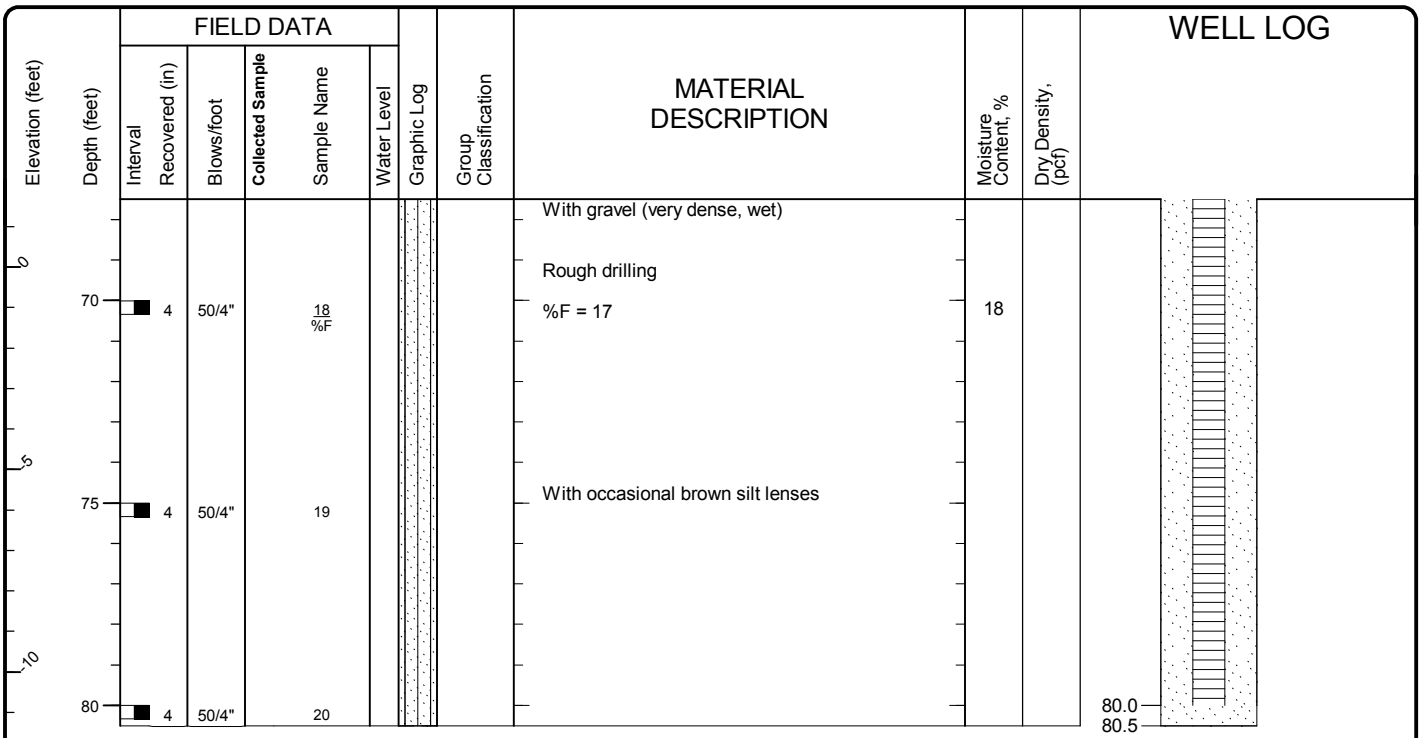
Log of Boring G-1 (continued)

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-2
Sheet 2 of 3

Redmond: Date:7/1/14 Path:C:\USERS\KJANC\DESKTOP\21138001OO.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_WELL



Note: See Figure A-1 for explanation of symbols.

Log of Boring G-1 (continued)

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-2
Sheet 3 of 3

Redmond: Date:7/1/14 Path:C:\USERS\KJANC\DESKTOP\21138000100.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_WELL

Drilled Start 12/20/2013 End 12/20/2013	Total Depth (ft) 86.25	Logged By CEW Checked By MWS	Driller Boretec, Inc.	Drilling Method Hollow-Stem Auger
Surface Elevation (ft) Vertical Datum 69.17		Hammer Data Rope & Cathead 140 (lbs) / 30 (in) Drop		Drilling Equipment EC55 Track-Mounted Drill Rig
Easting (X) Northing (Y)		System Datum		Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)
Notes:				

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)	REMARKS
	0						CC	9½ inches portlant cement concrete			
							SM	Grayish brown silty fine to medium sand with gravel (medium dense, moist) (fill)			
65		15	13	1							
	5	9.5	8	2							Wood debris in sample
							CL	Grayish brown lean clay (very stiff, moist) (recent deposits)			
		14	17	3							
60	10	8	15	4							Wood debris in sample
							SM	Grayish brown silty fine sand (medium dense, moist)			
		9	21	5							Wood debris and 3 inches of organic matter in sample
55							ML	Grayish brown silt (very stiff, moist to wet)			
	15	14	22	6							
							SP	Brown and orange-brown silty fine sand (medium dense, moist)			
		16	25	7							
50							SM	Light brown silty fine to medium sand (dense, moist) (glacially consolidated soils)	9		%F = 37
	20	16	39	8 %F							
							SP-SM	Light brown fine to medium sand with silt (dense to very dense, moist)	4		%F = 9
45		18	44	9 %F							
	25	14	50/4"	10 %F					3		%F = 12 Rough drilling
							SM	Brown silty fine to medium sand with gravel and occasional cobbles (very dense, moist) (till-like)			
40	30										

Note: See Figure A-1 for explanation of symbols.

Redmond: Date:7/1/14 Path:C:\USERS\KJANC\DESKTOP\2113800100.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_STANDARD

Log of Boring G-2

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-3
Sheet 1 of 3

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	Blows/foot	Collected Sample: Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)	REMARKS
	30	5	50/5"	11 %F				Grades to fine to coarse	6		%F = 26 Rough drilling
35											
	35	11	79/11"	12 %F				Grades to fine to medium	7		%F = 24
30											
	40	6	50/6"	13							
25											
	45	2	50/2"	14							
							SM	Brown silty fine to coarse sand with gravel (very dense, moist) (weathered gravel clasts)			
20											
	50	5	50/5"	15							
											Rough drilling
15											
	55	3	50/3"	16							
10											
	60	12	50/6"	17							
5											
	65	6	50/6"	18							

Note: See Figure A-1 for explanation of symbols.

Redmond: Date:7/1/14 Path:C:\USERS\KJANC\DESKTOP\21138000100.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_STANDARD

Log of Boring G-2 (continued)

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Elevation (feet)	Depth (feet)	FIELD DATA: Interval Recovered (in)	FIELD DATA: Blows/foot	FIELD DATA: Collected Sample / Sample Name Testing	FIELD DATA: Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content, %	Dry Density, (pcf)	REMARKS
0	70	11	92/11"	19				Grades to moist to wet			
-5	75	12	90	20			SM	Brown silty fine to coarse sand with gravel (very dense, wet) (till-like)			
-10	80	18	90	21							
-15	85		94/9"	22							

Note: See Figure A-1 for explanation of symbols.

Log of Boring G-2 (continued)

GeoEngineers

Project: 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-00

Figure A-3
Sheet 3 of 3

Redmond: Date:7/1/14 Path:C:\USERS\KJANC\DESKTOP\21138000100.GPJ DBTemplate\LibTemplate\GEOENGINEERS8.GDT/GEI8_GEOTECH_STANDARD

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	TS	Topsoil/ Forest Duff/Sod

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Material Description Contact

Distinct contact between soil strata or geologic units

Approximate location of soil strata change within a geologic soil unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

A "P" indicates sampler pushed using the weight of the drill rig.

Laboratory / Field Tests

%F	Percent fines
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
PPM	Parts per million
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen
NT	Not Tested

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

KEY TO EXPLORATION LOGS

GeoEngineers

FIGURE A-1

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	9/2/2014	9/2/2014	35	FK	DAC	Cascade Drilling, LP	Continuous

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
69 NAVD 88		GeoProbe 6600

Easting (X) / Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)
			Not encountered	

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
65	0		48						CC	4-inches concrete			
						1			SM	Brown silty fine to medium sand with occasional gravel (loose, moist) (fill)	SS	<1	
						2 CA			SM	Dark brown silty fine to medium sand with wood chips and organics (loose, moist)	MS	<1	Creosote odor
60	5		60			3			SM	Brown-gray silty fine to medium sand with occasional gravel (loose, moist)	SS	<1	
						4 CA			ML	Gray sandy silt (medium stiff, moist)	SS	<1	
55	10		60			5					NS	<1	
						6					NS	<1	
						7 CA			ML	Gray-brown sandy silt (medium stiff, moist)	NS	<1	
50	15		52			8			SP-SM	Gray sand with silt (medium dense, moist)	NS	<1	
	20		56			9				Grades to brown	NS	<1	
45											NS	<1	
	25		60								NS	<1	
40													
	30		60										
35	35										NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-1

GeoEngineers

Project: GID 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-01

Figure A-2
Sheet 1 of 1

Seattle: Date:9/11/14 Path:\\SEA\PROJECTS\21211380001\GINT\21138001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	9/2/2014	9/2/2014	20	FK	DAC	Cascade Drilling, LP	Continuous

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment
69 NAVD 88		GeoProbe 6600

Easting (X) / Northing (Y)	System Datum	Groundwater: Date Measured	Depth to Water (ft)	Elevation (ft)
			Not encountered	

Notes:

Elevation (feet)	Depth (feet)	Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0								CC	4-inches concrete			
			48						SM	Brown-gray silty fine to medium sand with occasional gravel, wood, organics, and brick debris			
65						1					SS	<1	
						2 CA					SS	<1	Petroleum odor
	5		60						ML	Gray silt (stiff, moist)			
						3					SS	<1	Petroleum odor
60						4 CA					MS	<1	Petroleum odor
	10		48						SM	Gray silty fine to medium sand (medium dense, moist)			
						5					MS	<1	Petroleum odor
55						6 CA					NS	<1	
	15		36						SM	Gray-brown silty fine to medium sand (medium dense, moist)			
						7					NS	<1	
50													
	20					8					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-2

GeoEngineers

Project: GID 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-01

Figure A-3
Sheet 1 of 1

Seattle: Date:9/11/14 Path:\\SEA\PROJECTS\21213800\1\GINT\21138001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start	End	Total Depth (ft)	Logged By	Checked By	Driller	Drilling Method
	9/2/2014	9/2/2014	30	FK	DAC	Cascade Drilling, LP	Continuous

Surface Elevation (ft) / Vertical Datum	Hammer Data	Drilling Equipment	Groundwater
85 / NAVD 88		GeoProbe 6600	Date Measured / Depth to Water (ft) / Elevation (ft): See remarks

Easting (X) / Northing (Y)	System Datum	Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample / Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
	0							AC	2-inches asphalt concrete			
								CC	4-inches concrete			
			0						No recovery			
80	5		0									
75	10		46		1			SM	Gray-brown silty fine to medium sand (loose, moist)	NS	<1	
					2							
70	15		56									
					3			SM	Gray silty fine to medium sand with occasional gravel, wood chips and concrete debris (medium dense, moist)	NS	<1	
65	20		52		4 CA			SM	Gray silty fine to medium sand with occasional gravel (dense, moist)	NS	<1	
									Becomes wet	NS	<1	Perched groundwater observed at 22 feet
60	25		58		5 CA				Becomes moist	NS	<1	
					6 CA					NS	<1	
55	30				7 CA					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-3

GeoEngineers

Project: GID 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-01

Figure A-4
Sheet 1 of 1

Seattle: Date:9/11/14 Path:\\SEA\PROJECTS\21211380001\GINT\21138001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start	End	Total Depth (ft)	Logged By	Driller	Drilling Method
	9/2/2014	9/2/2014	30	FK Checked By DAC	Cascade Drilling, LP	Continuous

Surface Elevation (ft) Vertical Datum	Hammer Data	Drilling Equipment
86 NAVD 88		GeoProbe 6600

Easting (X) Northing (Y)	System Datum	Groundwater Date Measured / Depth to Water (ft) / Elevation (ft)
		See remarks

Notes:

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample	Sample Name / Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
85	0		44			1			AC	2-inches asphalt concrete			
									CC	4-inches concrete			
									SM	Brown silty fine to medium sand (loose, moist) (fill)	NS	<1	
						2 CA					NS	<1	
80	5		26							No recovery			
						3			SM	Gray-brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<1	
75	10		40			4					NS	<1	
70	15		52			5					NS	<1	
65	20		56			6 CA					NS	<1	
						7				Trace wood chips	NS	<1	Perched groundwater observed at 23 feet
60	25		58			8 CA			SM	Gray silt with fine to medium sand, occasional gravel and oranics (dense, wet)	NS	<1	
						9 CA				Grades to moist	NS	<1	
	30					10					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-4

GeoEngineers

Project: GID 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-01

Figure A-5
Sheet 1 of 1

Seattle: Date:9/11/14 Path:\\SEA\PROJECTS\21211380001\GINT\21138001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

Drilled	Start 9/2/2014	End 9/2/2014	Total Depth (ft) 30	Logged By FK / Checked By DAC	Driller Cascade Drilling, LP	Drilling Method Continuous
Surface Elevation (ft) 86 / Vertical Datum NAVD 88			Hammer Data		Drilling Equipment GeoProbe 6600	
Easting (X) / Northing (Y)			System Datum		Groundwater: Date Measured / Depth to Water (ft) / Elevation (ft)	
Notes:					See remarks	

Elevation (feet)	Depth (feet)	FIELD DATA: Interval	Recovered (in)	Blows/foot	Collected Sample / Sample Name Testing	Water Level	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Sheen	Headspace Vapor (ppm)	REMARKS
85	0							AC	2-inches asphalt concrete			
								CC	4-inches concrete			
					1 CA			SM	Brown silty fine to medium sand (loose, moist) (fill)	NS	<1	
	5		20									
80			42						No recovery			
					2			SM	Brown silty fine to medium sand with occasional gravel (very loose, moist)	NS	<1	
	10		23									
75					3					NS	<1	
	15		48									
70					4					NS	<1	
	20		56		5					NS	<1	
65									Grades to loose with wood chips			
					6 CA					NS	<1	
					7 CA			SM	Gray silty fine to medium sand with organics (loose, wet)	NS	<1	Perched groundwater observed at 24 feet
	25		60					ML	Gray silt with fine to medium sand with occasional gravel (dense, moist)			
60					8 CA					NS	<1	
	30				9					NS	<1	

Note: See Figure A-1 for explanation of symbols.

Log of Boring DP-5

GeoEngineers

Project: GID 9th and Lenora Development
Project Location: Seattle, Washington
Project Number: 21138-001-01

Figure A-6
Sheet 1 of 1

Seattle: Date:9/11/14 Path:\\SEA\PROJECTS\21211380001\GINT\21138001.GPJ DBTemplate/LibTemplate:GEOENGINEERS8.GDT/GEI8_ENVIRONMENTAL_STANDARD

APPENDIX C
Chemical Analytical Data Program

APPENDIX C
CHEMICAL ANALYTICAL DATA PROGRAM

Analytical Methods

Chain-of-custody procedures were followed during the transport of the field samples to the analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference and laboratory quality control records are included in this appendix. The analytical results are also summarized in the text and tables of this report.

Analytical Data Review

The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike recoveries, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the validity of the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report.

Analytical Data Review Summary

No quality control exceptions were noted by the testing laboratory. It is our opinion that the analytical data are of acceptable quality for their intended use in this report.

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

April 29, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03, T300
Laboratory Reference No. 1504-253

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on April 28, 2015.

Please note that this is a *revised* report, and replaces the original due to revisions of the sample identifications.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 29, 2015
Samples Submitted: April 28, 2015
Laboratory Reference: 1504-253
Project: 21138-001-03, T300

Case Narrative

Samples were collected on April 28, 2015 and received by the laboratory on April 28, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 29, 2015
Samples Submitted: April 28, 2015
Laboratory Reference: 1504-253
Project: 21138-001-03, T300

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UTL9-S-5.0	04-253-02	Soil	4-28-15	4-28-15	
UTL9-N-5.0	04-253-04	Soil	4-28-15	4-28-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 29, 2015
Samples Submitted: April 28, 2015
Laboratory Reference: 1504-253
Project: 21138-001-03, T300

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UTL9-S-5.0**					
Laboratory ID:	04-253-02					
Benzene	**ND**	0.020	EPA 8021B	4-28-15	4-28-15	
Toluene	**ND**	0.064	EPA 8021B	4-28-15	4-28-15	
Ethyl Benzene	**ND**	0.064	EPA 8021B	4-28-15	4-28-15	
m,p-Xylene	**ND**	0.064	EPA 8021B	4-28-15	4-28-15	
o-Xylene	**ND**	0.064	EPA 8021B	4-28-15	4-28-15	
Gasoline	**ND**	6.4	NWTPH-Gx	4-28-15	4-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*121*	*68-123*				
Client ID:	**UTL9-N-5.0**					
Laboratory ID:	04-253-04					
Benzene	**ND**	0.020	EPA 8021B	4-28-15	4-28-15	
Toluene	**ND**	0.055	EPA 8021B	4-28-15	4-28-15	
Ethyl Benzene	**ND**	0.055	EPA 8021B	4-28-15	4-28-15	
m,p-Xylene	**ND**	0.055	EPA 8021B	4-28-15	4-28-15	
o-Xylene	**ND**	0.055	EPA 8021B	4-28-15	4-28-15	
Gasoline	**ND**	5.5	NWTPH-Gx	4-28-15	4-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*121*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 29, 2015
Samples Submitted: April 28, 2015
Laboratory Reference: 1504-253
Project: 21138-001-03, T300

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0428S1					
Benzene	**ND**	0.020	EPA 8021B	4-28-15	4-28-15	
Toluene	**ND**	0.050	EPA 8021B	4-28-15	4-28-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	4-28-15	4-28-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	4-28-15	4-28-15	
o-Xylene	**ND**	0.050	EPA 8021B	4-28-15	4-28-15	
Gasoline	**ND**	5.0	NWTPH-Gx	4-28-15	4-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-253-02										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*121*	*121*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0428S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.917**	**0.957**	1.00	1.00		**92**	**96**	75-117	4	13	
Toluene	**0.934**	**0.971**	1.00	1.00		**93**	**97**	78-118	4	12	
Ethyl Benzene	**0.934**	**0.970**	1.00	1.00		**93**	**97**	78-118	4	12	
m,p-Xylene	**0.955**	**0.983**	1.00	1.00		**96**	**98**	78-121	3	13	
o-Xylene	**0.946**	**0.982**	1.00	1.00		**95**	**98**	77-119	4	13	
Surrogate:											
Fluorobenzene						*88*	*90*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 29, 2015
Samples Submitted: April 28, 2015
Laboratory Reference: 1504-253
Project: 21138-001-03, T300

% MOISTURE

Date Analyzed: 4-28-15

Client ID	Lab ID	% Moisture
UTL9-S-5.0	04-253-02	13
UTL9-N-5.0	04-253-04	14

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03, T300
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☒ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 04-253

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		HOLD				% Moisture
1	UTL9-W-5.0 DUP	4/28/15	1330	S	2																		⊗				
2	UTL9-S-5.0		1410		2		⊗																				X
3	UTL9-E-5.0		1420		2																		⊗				
4	UTL9-N-5.0 DUP		1400		2		⊗																				X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	4/28/15	1545	
Received		COE	4/28/15	1545	
Relinquished					
Received					
Relinquished					
Received					

Reviewed/Date | Reviewed/Date | Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

April 30, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1504-270

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on April 29, 2015.

Please note that this is a *revised* report, and replaces the original due to revisions of the sample identifications.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

Case Narrative

Samples were collected on April 29, 2015 and received by the laboratory on April 29, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UTL9-S-15.0	04-270-01	Soil	4-29-15	4-29-15	
UTL9-S-20.0	04-270-02	Soil	4-29-15	4-29-15	
UTL9-S-23.0	04-270-03	Soil	4-29-15	4-29-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UTL9-S-15.0**					
Laboratory ID:	04-270-01					
Benzene	**0.022**	0.020	EPA 8021B	4-29-15	4-29-15	
Toluene	**ND**	0.049	EPA 8021B	4-29-15	4-29-15	
Ethyl Benzene	**ND**	0.049	EPA 8021B	4-29-15	4-29-15	
m,p-Xylene	**0.057**	0.049	EPA 8021B	4-29-15	4-29-15	
o-Xylene	**ND**	0.049	EPA 8021B	4-29-15	4-29-15	
Gasoline	**ND**	4.9	NWTPH-Gx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*119*	*68-123*				
Client ID:	**UTL9-S-20.0**					
Laboratory ID:	04-270-02					
Benzene	**0.029**	0.020	EPA 8021B	4-29-15	4-29-15	
Toluene	**ND**	0.050	EPA 8021B	4-29-15	4-29-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	4-29-15	4-29-15	
m,p-Xylene	**0.084**	0.050	EPA 8021B	4-29-15	4-29-15	
o-Xylene	**0.080**	0.050	EPA 8021B	4-29-15	4-29-15	
Gasoline	**ND**	5.0	NWTPH-Gx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*121*	*68-123*				
Client ID:	**UTL9-S-23.0**					
Laboratory ID:	04-270-03					
Benzene	**ND**	0.020	EPA 8021B	4-29-15	4-29-15	
Toluene	**ND**	0.053	EPA 8021B	4-29-15	4-29-15	
Ethyl Benzene	**ND**	0.053	EPA 8021B	4-29-15	4-29-15	
m,p-Xylene	**ND**	0.053	EPA 8021B	4-29-15	4-29-15	
o-Xylene	**ND**	0.053	EPA 8021B	4-29-15	4-29-15	
Gasoline	**ND**	5.3	NWTPH-Gx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*116*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UTL9-S-15.0**					
Laboratory ID:	04-270-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	4-29-15	4-29-15	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				
Client ID:	**UTL9-S-23.0**					
Laboratory ID:	04-270-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	4-29-15	4-29-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0429S1					
Benzene	**ND**	0.020	EPA 8021B	4-29-15	4-29-15	
Toluene	**ND**	0.050	EPA 8021B	4-29-15	4-29-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	4-29-15	4-29-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	4-29-15	4-29-15	
o-Xylene	**ND**	0.050	EPA 8021B	4-29-15	4-29-15	
Gasoline	**ND**	5.0	NWTPH-Gx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-254-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*93*	*93*	*68-123*			
MATRIX SPIKES											
Laboratory ID:	04-254-12										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**0.848**	**0.950**	1.00	1.00	ND	**85**	**95**	71-122	11	21	
Toluene	**0.870**	**0.960**	1.00	1.00	ND	**87**	**96**	77-124	10	17	
Ethyl Benzene	**0.877**	**0.969**	1.00	1.00	ND	**88**	**97**	77-121	10	19	
m,p-Xylene	**0.890**	**0.969**	1.00	1.00	ND	**89**	**97**	78-124	8	19	
o-Xylene	**0.882**	**0.967**	1.00	1.00	ND	**88**	**97**	75-117	9	13	
Surrogate:											
Fluorobenzene						*96*	*94*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0429S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	4-29-15	4-29-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	04-256-03									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*81* *82*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: April 30, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-270
Project: 21138-001-03

% MOISTURE

Date Analyzed: 4-29-15

Client ID	Lab ID	% Moisture
UTL9-S-15.0	04-270-01	12
UTL9-S-20.0	04-270-02	12
UTL9-S-23.0	04-270-03	11

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 04-270

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☒ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	UTL9-S-15.0	4/29/15	0930	S	2		⊗		⊗													✓
2	UTL9-S-20.0	↓	1000	S	2		⊗															
3	UTL9-S-23.0	↓	1025	S	2		⊗		⊗													

	Signature	Company	Date	Time
Relinquished		GEO	4/29/15	1240
Received		ONE	4/29/15	1240
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
Results by 10.00 a.m on 4/30/15.

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 1, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1504-279

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on April 29, 2015.

Please note that this is a *revised* report, and replaces the original due to revisions of the sample identifications.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

Case Narrative

Samples were collected on April 29, 2015 and received by the laboratory on April 29, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UTL9-N-18.0	04-279-03	Soil	4-29-15	4-29-15	
UTL9-E-15.0	04-279-06	Soil	4-29-15	4-29-15	
UTL9-E-18.0	04-279-07	Soil	4-29-15	4-29-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UTL9-N-18.0**					
Laboratory ID:	04-279-03					
Benzene	**ND**	0.020	EPA 8021B	4-30-15	4-30-15	
Toluene	**ND**	0.059	EPA 8021B	4-30-15	4-30-15	
Ethyl Benzene	**ND**	0.059	EPA 8021B	4-30-15	4-30-15	
m,p-Xylene	**ND**	0.059	EPA 8021B	4-30-15	4-30-15	
o-Xylene	**ND**	0.059	EPA 8021B	4-30-15	4-30-15	
Gasoline	**ND**	5.9	NWTPH-Gx	4-30-15	4-30-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*109*	*68-123*				
Client ID:	**UTL9-E-15.0**					
Laboratory ID:	04-279-06					
Benzene	**0.060**	0.020	EPA 8021B	4-30-15	4-30-15	
Toluene	**ND**	0.060	EPA 8021B	4-30-15	4-30-15	
Ethyl Benzene	**ND**	0.060	EPA 8021B	4-30-15	4-30-15	
m,p-Xylene	**ND**	0.060	EPA 8021B	4-30-15	4-30-15	
o-Xylene	**ND**	0.060	EPA 8021B	4-30-15	4-30-15	
Gasoline	**ND**	6.0	NWTPH-Gx	4-30-15	4-30-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*110*	*68-123*				
Client ID:	**UTL9-E-18.0**					
Laboratory ID:	04-279-07					
Benzene	**0.052**	0.020	EPA 8021B	4-30-15	4-30-15	
Toluene	**ND**	0.065	EPA 8021B	4-30-15	4-30-15	
Ethyl Benzene	**ND**	0.065	EPA 8021B	4-30-15	4-30-15	
m,p-Xylene	**ND**	0.065	EPA 8021B	4-30-15	4-30-15	
o-Xylene	**ND**	0.065	EPA 8021B	4-30-15	4-30-15	
Gasoline	**50**	6.5	NWTPH-Gx	4-30-15	4-30-15	O
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*111*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UTL9-N-18.0**					
Laboratory ID:	04-279-03					
Diesel Range Organics	**180**	150	NWTPH-Dx	4-29-15	4-30-15	N
Lube Oil	**1700**	300	NWTPH-Dx	4-29-15	4-30-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**UTL9-E-15.0**					
Laboratory ID:	04-279-06					
Diesel Range Organics	**34**	30	NWTPH-Dx	4-29-15	4-29-15	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0430S1					
Benzene	**ND**	0.020	EPA 8021B	4-30-15	4-30-15	
Toluene	**ND**	0.050	EPA 8021B	4-30-15	4-30-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	4-30-15	4-30-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	4-30-15	4-30-15	
o-Xylene	**ND**	0.050	EPA 8021B	4-30-15	4-30-15	
Gasoline	**ND**	5.0	NWTPH-Gx	4-30-15	4-30-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-279-03										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*109*	*116*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0430S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.947**	**0.940**	1.00	1.00		**95**	**94**	75-117	1	13	
Toluene	**0.952**	**0.947**	1.00	1.00		**95**	**95**	78-118	1	12	
Ethyl Benzene	**0.952**	**0.950**	1.00	1.00		**95**	**95**	78-118	0	12	
m,p-Xylene	**0.956**	**0.960**	1.00	1.00		**96**	**96**	78-121	0	13	
o-Xylene	**0.953**	**0.959**	1.00	1.00		**95**	**96**	77-119	1	13	
Surrogate:											
Fluorobenzene						*90*	*90*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0429S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	4-29-15	4-29-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	4-29-15	4-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	04-279-06										
	ORIG	DUP									
Diesel Range Organics	**29.1**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*77*	*78*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 1, 2015
Samples Submitted: April 29, 2015
Laboratory Reference: 1504-279
Project: 21138-001-03

% MOISTURE

Date Analyzed: 4-29&30-15

Client ID	Lab ID	% Moisture
UTL9-N-18.0	04-279-03	16
UTL9-E-15.0	04-279-06	15
UTL9-E-18.0	04-279-07	20

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 04-279

Company: GeoEngineers
Project Number: 21138-001-03
Project Name: 9th & Lenora Project
Project Manager: Fasih Khan
Sampled by: Fasih Khan

Turnaround Request (in working days)
(Check One)
- [x] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		HOLD					% Moisture
1	UTL9-~~W~~N-10.0 DB 4/30/15	4/29/15	1300	S	2																		X					
2	UTL9-~~W~~N-15.0		1320																				X					
3	UTL9-~~W~~N-18.0		1340				X		X																			X
4	UTL9-~~W~~N-25.0		1350																				X					
5	UTL9-E-10.0		1400																				X					
6	UTL9-E-15.0		1410				X		X																			X
7	UTL9-E-18.0	↓	1420	↓	↓		O																X NO					O

	Signature	Company	Date	Time
Relinquished		GEI	4/29/15	1630
Received		CDSG	4/29/15	1630
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
O-Added 4/30/15. DB (Same day)

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

May 6, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1505-024

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on May 5, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 6, 2015
Samples Submitted: May 5, 2015
Laboratory Reference: 1505-024
Project: 21138-001-03

Case Narrative

Samples were collected on May 5, 2015 and received by the laboratory on May 5, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 6, 2015
Samples Submitted: May 5, 2015
Laboratory Reference: 1505-024
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UTL9-S-30.0	05-024-01	Soil	5-5-15	5-5-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 6, 2015
Samples Submitted: May 5, 2015
Laboratory Reference: 1505-024
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UTL9-S-30.0**					
Laboratory ID:	05-024-01					
Benzene	**ND**	0.020	EPA 8021B	5-5-15	5-5-15	
Toluene	**ND**	0.086	EPA 8021B	5-5-15	5-5-15	
Ethyl Benzene	**ND**	0.086	EPA 8021B	5-5-15	5-5-15	
m,p-Xylene	**ND**	0.086	EPA 8021B	5-5-15	5-5-15	
o-Xylene	**ND**	0.086	EPA 8021B	5-5-15	5-5-15	
Gasoline	**ND**	8.6	NWTPH-Gx	5-5-15	5-5-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*123*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 6, 2015
Samples Submitted: May 5, 2015
Laboratory Reference: 1505-024
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0505S1					
Benzene	**ND**	0.020	EPA 8021B	5-5-15	5-5-15	
Toluene	**ND**	0.050	EPA 8021B	5-5-15	5-5-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	5-5-15	5-5-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	5-5-15	5-5-15	
o-Xylene	**ND**	0.050	EPA 8021B	5-5-15	5-5-15	
Gasoline	**ND**	5.0	NWTPH-Gx	5-5-15	5-5-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	05-024-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*123*	*123*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0505S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.964**	**0.956**	1.00	1.00		**96**	**96**	75-117	1	13	
Toluene	**0.941**	**0.960**	1.00	1.00		**94**	**96**	78-118	2	12	
Ethyl Benzene	**0.961**	**0.962**	1.00	1.00		**96**	**96**	78-118	0	12	
m,p-Xylene	**0.969**	**0.964**	1.00	1.00		**97**	**96**	78-121	1	13	
o-Xylene	**0.949**	**0.964**	1.00	1.00		**95**	**96**	77-119	2	13	
Surrogate:											
Fluorobenzene						*89*	*91*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: May 6, 2015
Samples Submitted: May 5, 2015
Laboratory Reference: 1505-024
Project: 21138-001-03

% MOISTURE

Date Analyzed: 5-5-15

Client ID	Lab ID	% Moisture
UTL9-S-30.0	05-024-01	21

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

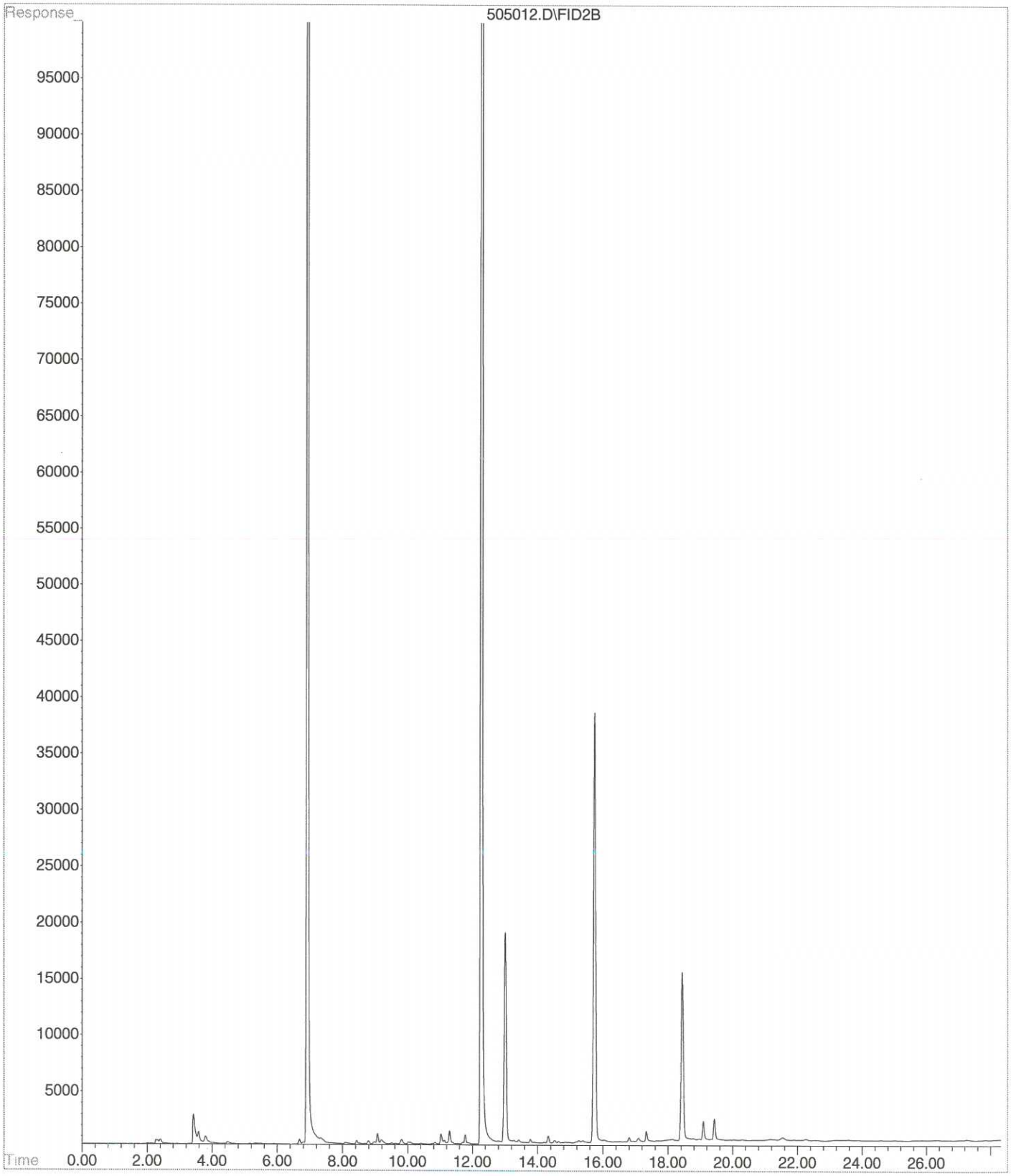
Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

File : X:\BTEX\DARYL\DATA\D150505\505012.D
Operator :
Acquired : 5 May 2015 16:25 using AcqMethod 150327B.M
Instrument : Daryl
Sample Name: 05-024-01s
Misc Info : V2-36-17
Vial Number: 12



Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One)

- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 05-024

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		HOLD				% Moisture
1	UTL9-S-30.0	5/5/15	1315	S	2		X																				X
2	UTL9-S-35.0	5/5/15	1350	S	2																		X				

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEO	5/5/15	1425	
Received		ONSITE	5/5/15	1425	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 29, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1507-215

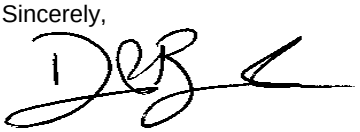
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on July 27, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

Case Narrative

Samples were collected on July 27, 2015 and received by the laboratory on July 27, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
EX-1-18.0	07-215-01	Soil	7-27-15	7-27-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**EX-1-18.0**					
Laboratory ID:	07-215-01					
Benzene	**ND**	0.020	EPA 8021B	7-28-15	7-28-15	
Toluene	**ND**	0.061	EPA 8021B	7-28-15	7-28-15	
Ethyl Benzene	**ND**	0.061	EPA 8021B	7-28-15	7-28-15	
m,p-Xylene	**ND**	0.061	EPA 8021B	7-28-15	7-28-15	
o-Xylene	**ND**	0.061	EPA 8021B	7-28-15	7-28-15	
Gasoline	**ND**	6.1	NWTPH-Gx	7-28-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**EX-1-18.0**					
Laboratory ID:	07-215-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	7-28-15	7-28-15	
Lube Oil	**68**	56	NWTPH-Dx	7-28-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0728S1					
Benzene	**ND**	0.020	EPA 8021B	7-28-15	7-28-15	
Toluene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
o-Xylene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
Gasoline	**ND**	5.0	NWTPH-Gx	7-28-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-072-04										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*102*	*120*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0728S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.992**	**1.04**	1.00	1.00		**99**	**104**	75-117	5	13	
Toluene	**0.978**	**1.02**	1.00	1.00		**98**	**102**	78-118	4	12	
Ethyl Benzene	**0.965**	**1.00**	1.00	1.00		**97**	**100**	78-118	4	12	
m,p-Xylene	**0.976**	**1.02**	1.00	1.00		**98**	**102**	78-121	4	13	
o-Xylene	**0.967**	**1.01**	1.00	1.00		**97**	**101**	77-119	4	13	
Surrogate:											
Fluorobenzene						*88*	*92*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0728S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-28-15	7-28-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	7-28-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-194-05										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*93*	*97*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 29, 2015
Samples Submitted: July 27, 2015
Laboratory Reference: 1507-215
Project: 21138-001-03

% MOISTURE

Date Analyzed: 7-28-15

Client ID	Lab ID	% Moisture
EX-1-18.0	07-215-01	10

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Days
- ☐ 3 Days
- ☐ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 07-215

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A			HOLD			% Moisture
1	EX-1-18.0	7/27/15	0930	S	2		X		X																		X
2	G-1-72715	7/27/15	0945	W	1																			X			

	Signature	Company	Date	Time
Relinquished		GEI	7/27/15	1440
Received		GEI	7/27/15	1440
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

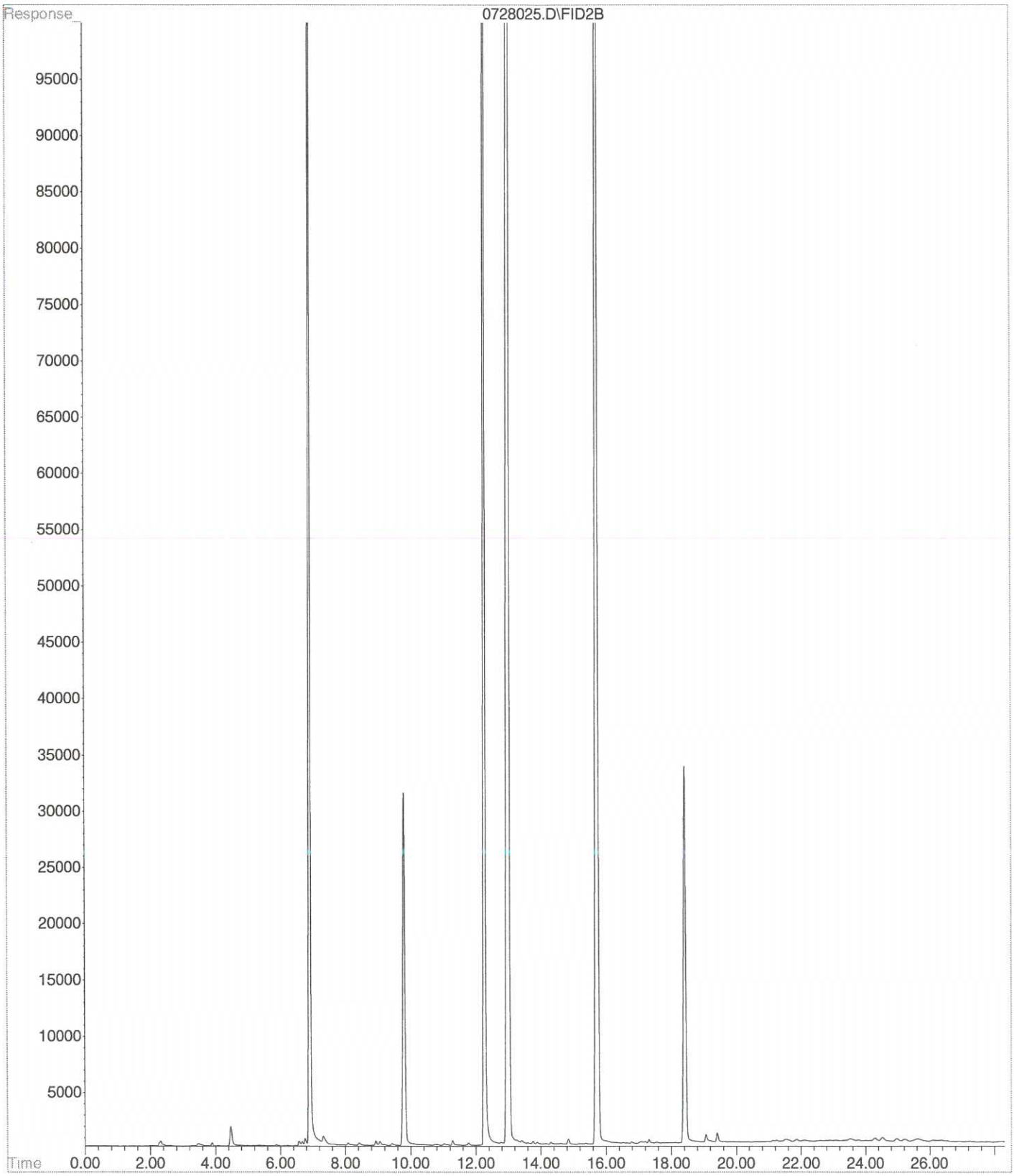
Reviewed/Date

Chromatograms with final report ☐

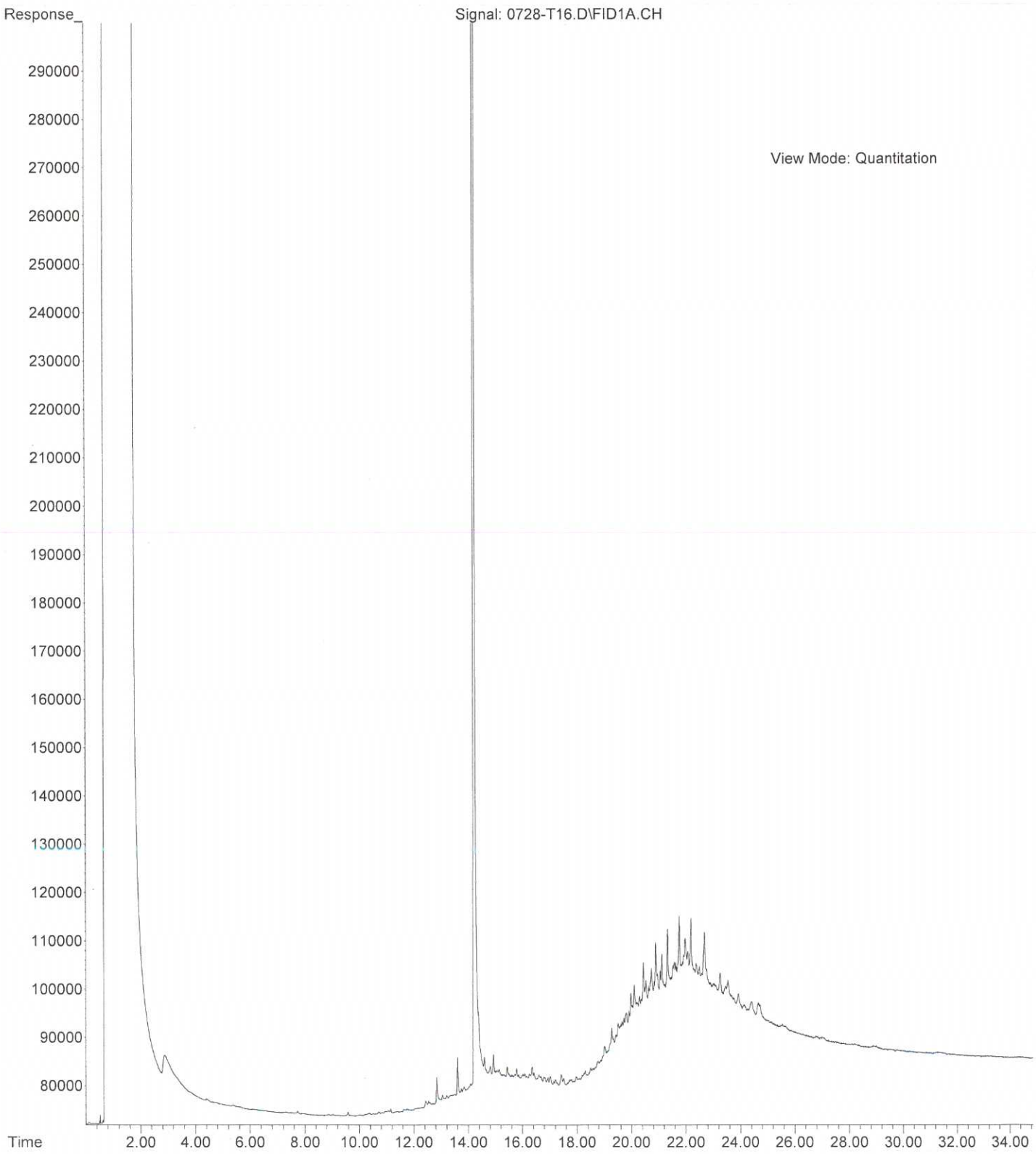
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

File : D:\BTEX\DATA\D150728\0728025.D
Operator :
Acquired : 29 Jul 2015 00:05 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 07-215-01s
Misc Info :
Vial Number: 25



File :X:\DIESELS\TERI\DATA\T150728\0728-T16.D
Operator : ZT
Acquired : 29 Jul 2015 10:23 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 07-215-01 RR
Misc Info :
Vial Number: 16



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 3, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1507-206

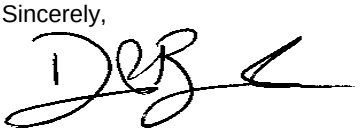
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on July 24, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

Case Narrative

Samples were collected on July 24, 2015 and received by the laboratory on July 24, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA method 5035A, samples were received by the laboratory in pre-weighed 40 ml VOA vials preserved with either Methanol or Sodium Bisulfate.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS-1	07-206-01	Soil	7-24-15	7-24-15	
SS-2	07-206-02	Soil	7-24-15	7-24-15	
SS-3	07-206-03	Soil	7-24-15	7-24-15	
SS-4	07-206-04	Soil	7-24-15	7-24-15	
EX-1-12.0	07-206-05	Soil	7-24-15	7-24-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**EX-1-12.0**					
Laboratory ID:	07-206-05					
Benzene	**ND**	0.020	EPA 8021B	7-28-15	7-29-15	
Toluene	**ND**	0.059	EPA 8021B	7-28-15	7-29-15	
Ethyl Benzene	**ND**	0.059	EPA 8021B	7-28-15	7-29-15	
m,p-Xylene	**ND**	0.059	EPA 8021B	7-28-15	7-29-15	
o-Xylene	**ND**	0.059	EPA 8021B	7-28-15	7-29-15	
Gasoline	**ND**	5.9	NWTPH-Gx	7-28-15	7-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*120*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-1**					
Laboratory ID:	07-206-01					
Diesel Range Organics	**56**	33	NWTPH-Dx	7-27-15	7-28-15	
Lube Oil Range Organics	**350**	67	NWTPH-Dx	7-27-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*57*	*50-150*				
Client ID:	**SS-2**					
Laboratory ID:	07-206-02					
Diesel Range Organics	**44**	29	NWTPH-Dx	7-27-15	7-27-15	
Lube Oil Range Organics	**210**	58	NWTPH-Dx	7-27-15	7-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*65*	*50-150*				
Client ID:	**SS-3**					
Laboratory ID:	07-206-03					
Diesel Range Organics	**74**	32	NWTPH-Dx	7-27-15	7-28-15	
Lube Oil Range Organics	**650**	65	NWTPH-Dx	7-27-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*74*	*50-150*				
Client ID:	**SS-4**					
Laboratory ID:	07-206-04					
Diesel Range Organics	**70**	30	NWTPH-Dx	7-27-15	7-27-15	
Lube Oil Range Organics	**380**	59	NWTPH-Dx	7-27-15	7-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*65*	*50-150*				
Client ID:	**EX-1-12.0**					
Laboratory ID:	07-206-05					
Diesel Range Organics	**ND**	27	NWTPH-Dx	7-27-15	7-27-15	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	7-27-15	7-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*61*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-1**					
Laboratory ID:	07-206-01					
Benzo[a]anthracene	**0.048**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Chrysene	**0.049**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo[b]fluoranthene	**0.043**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo(j,k)fluoranthene	**0.013**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo[a]pyrene	**0.041**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Indeno(1,2,3-c,d)pyrene	**0.026**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Dibenz[a,h]anthracene	**ND**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo[g,h,i]perylene	**0.031**	0.0089	EPA 8270D/SIM	7-29-15	7-30-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*67*	*32 - 114*				
Pyrene-d10	*59*	*33 - 121*				
Terphenyl-d14	*74*	*31 - 116*				

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-2**					
Laboratory ID:	07-206-02					
Benzo[a]anthracene	**0.38**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Chrysene	**0.35**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo[b]fluoranthene	**0.35**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo(j,k)fluoranthene	**0.12**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo[a]pyrene	**0.33**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Indeno(1,2,3-c,d)pyrene	**0.19**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Dibenz[a,h]anthracene	**0.050**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo[g,h,i]perylene	**0.18**	0.0077	EPA 8270D/SIM	7-29-15	7-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*32 - 114*				
Pyrene-d10	*74*	*33 - 121*				
Terphenyl-d14	*95*	*31 - 116*				

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-3**					
Laboratory ID:	07-206-03					
Benzo[a]anthracene	**0.010**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Chrysene	**0.010**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo[b]fluoranthene	**0.010**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo[a]pyrene	**ND**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Benzo[g,h,i]perylene	**ND**	0.0086	EPA 8270D/SIM	7-29-15	7-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*32 - 114*				
Pyrene-d10	*70*	*33 - 121*				
Terphenyl-d14	*78*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-4**					
Laboratory ID:	07-206-04					
Benzo[a]anthracene	**0.10**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Chrysene	**0.11**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo[b]fluoranthene	**0.13**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo(j,k)fluoranthene	**0.035**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo[a]pyrene	**0.095**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Indeno(1,2,3-c,d)pyrene	**0.081**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Dibenz[a,h]anthracene	**0.017**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Benzo[g,h,i]perylene	**0.090**	0.016	EPA 8270D/SIM	7-29-15	7-30-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*32 - 114*				
Pyrene-d10	*62*	*33 - 121*				
Terphenyl-d14	*81*	*31 - 116*				

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0728S1					
Benzene	**ND**	0.020	EPA 8021B	7-28-15	7-28-15	
Toluene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
o-Xylene	**ND**	0.050	EPA 8021B	7-28-15	7-28-15	
Gasoline	**ND**	5.0	NWTPH-Gx	7-28-15	7-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*88*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	07-072-04									
	ORIG	DUP								
Benzene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA	NA	NA	30	
Surrogate:										
Fluorobenzene						*102*	*120*	*68-123*		
SPIKE BLANKS										
Laboratory ID:	SB0728S1									
	SB	SBD	SB	SBD		SB	SBD			
Benzene	**0.992**	**1.04**	1.00	1.00		**99**	**104**	75-117	5	13
Toluene	**0.978**	**1.02**	1.00	1.00		**98**	**102**	78-118	4	12
Ethyl Benzene	**0.965**	**1.00**	1.00	1.00		**97**	**100**	78-118	4	12
m,p-Xylene	**0.976**	**1.02**	1.00	1.00		**98**	**102**	78-121	4	13
o-Xylene	**0.967**	**1.01**	1.00	1.00		**97**	**101**	77-119	4	13
Surrogate:										
Fluorobenzene						*88*	*92*	*68-123*		

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0727S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-27-15	7-27-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	7-27-15	7-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*55*	*50-150*				

DUPLICATE									
Laboratory ID:	07-206-05								
	ORIG	DUP							
Diesel Range	**ND**	**ND**	NA	NA	NA		NA	NA	NA
Lube Oil Range	**ND**	**ND**	NA	NA	NA		NA	NA	NA
Surrogate:									
o-Terphenyl					*61*	*74*	*50-150*		

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0729S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	7-29-15	7-29-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*32 - 114*				
Pyrene-d10	*86*	*33 - 121*				
Terphenyl-d14	*83*	*31 - 116*				

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

cPAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	07-205-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0727**	**0.0740**	0.0833	0.0833	ND	87	89	44 - 107	2	29	
Acenaphthylene	**0.0728**	**0.0727**	0.0833	0.0833	ND	87	87	44 - 121	0	27	
Acenaphthene	**0.0725**	**0.0726**	0.0833	0.0833	ND	87	87	47 - 109	0	26	
Fluorene	**0.0744**	**0.0761**	0.0833	0.0833	ND	89	91	49 - 115	2	28	
Phenanthrene	**0.0755**	**0.0751**	0.0833	0.0833	ND	91	90	45 - 114	1	26	
Anthracene	**0.0976**	**0.0997**	0.0833	0.0833	ND	117	120	43 - 140	2	27	
Fluoranthene	**0.0780**	**0.0764**	0.0833	0.0833	ND	94	92	44 - 126	2	27	
Pyrene	**0.0776**	**0.0758**	0.0833	0.0833	ND	93	91	43 - 125	2	27	
Benzo[a]anthracene	**0.0817**	**0.0820**	0.0833	0.0833	ND	98	98	42 - 134	0	27	
Chrysene	**0.0750**	**0.0752**	0.0833	0.0833	ND	90	90	45 - 114	0	27	
Benzo[b]fluoranthene	**0.0696**	**0.0742**	0.0833	0.0833	ND	84	89	38 - 131	6	33	
Benzo(j,k)fluoranthene	**0.0660**	**0.0671**	0.0833	0.0833	ND	79	81	44 - 114	2	34	
Benzo[a]pyrene	**0.0747**	**0.0745**	0.0833	0.0833	ND	90	89	40 - 136	0	29	
Indeno(1,2,3-c,d)pyrene	**0.0701**	**0.0710**	0.0833	0.0833	ND	84	85	45 - 126	1	30	
Dibenz[a,h]anthracene	**0.0728**	**0.0735**	0.0833	0.0833	ND	87	88	46 - 121	1	28	
Benzo[g,h,i]perylene	**0.0744**	**0.0739**	0.0833	0.0833	ND	89	89	43 - 120	1	31	
Surrogate:											
2-Fluorobiphenyl						*80*	*80*	*32 - 114*			
Pyrene-d10						*84*	*85*	*33 - 121*			
Terphenyl-d14						*83*	*87*	*31 - 116*			

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Date of Report: August 3, 2015
Samples Submitted: July 24, 2015
Laboratory Reference: 1507-206
Project: 21138-001-03

% MOISTURE

Date Analyzed: 7-27-15

Client ID	Lab ID	% Moisture
SS-1	07-206-01	25
SS-2	07-206-02	14
SS-3	07-206-03	23
SS-4	07-206-04	15
EX-1-12.0	07-206-05	8

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-05
Project Name: 9th & LENORA SITE
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☐ 2 Days
- ☐ 3 Days
- ☒ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Laboratory Number: 07-206

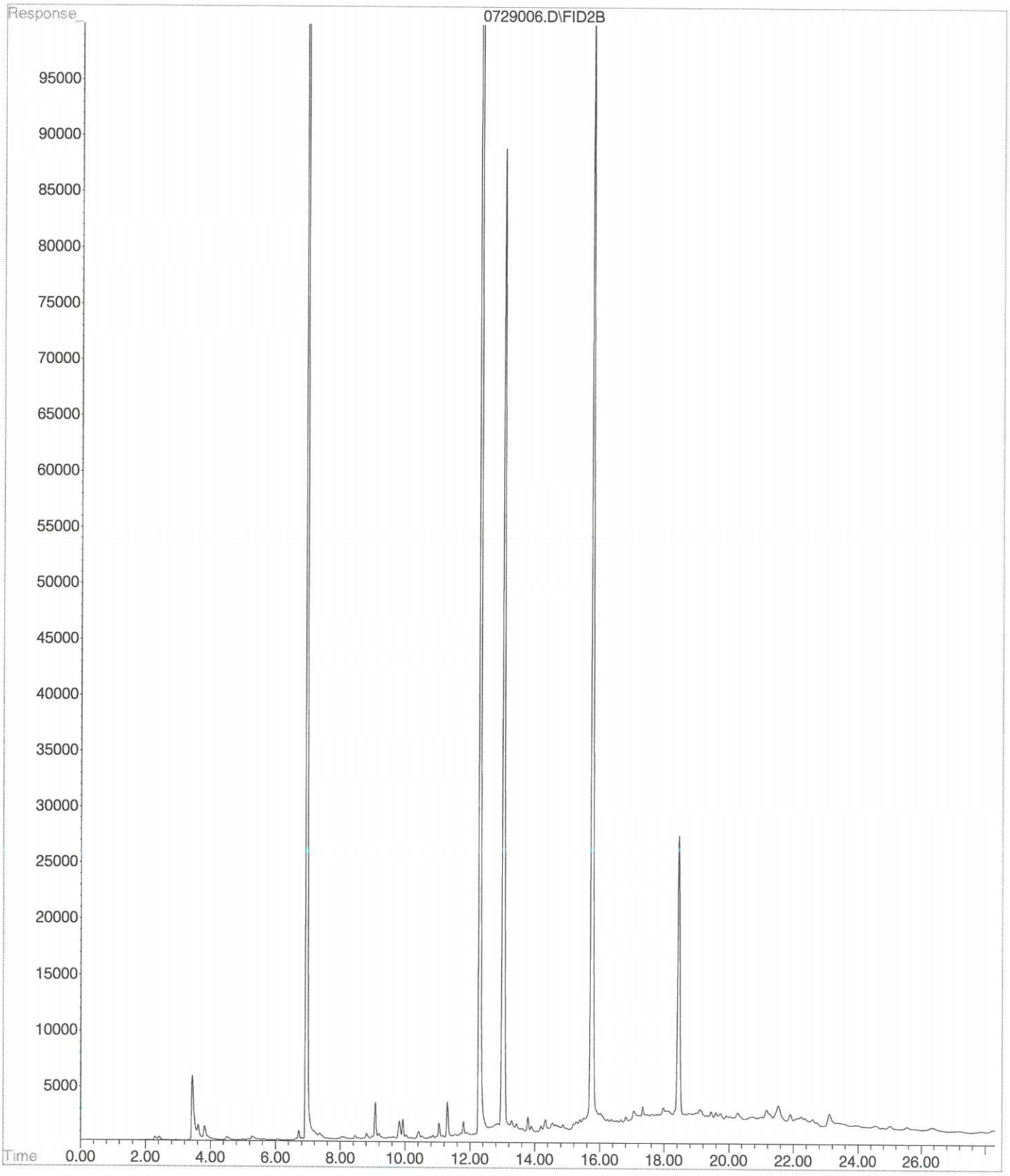
Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAHs ONLY					% Moisture
1	SS-1	7/24/15	0900	S	1				X													X					X
2	SS-2	↓	0910	↓	1				X													X					
3	SS-3		0930		1				X													X					
4	SS-4		0940		1				X													X					
5	EX-1-12.0	↓	1130	↓	2		X		X																		↓

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	7/24/15	1623	
Received		OSE	7/24/15	1623	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

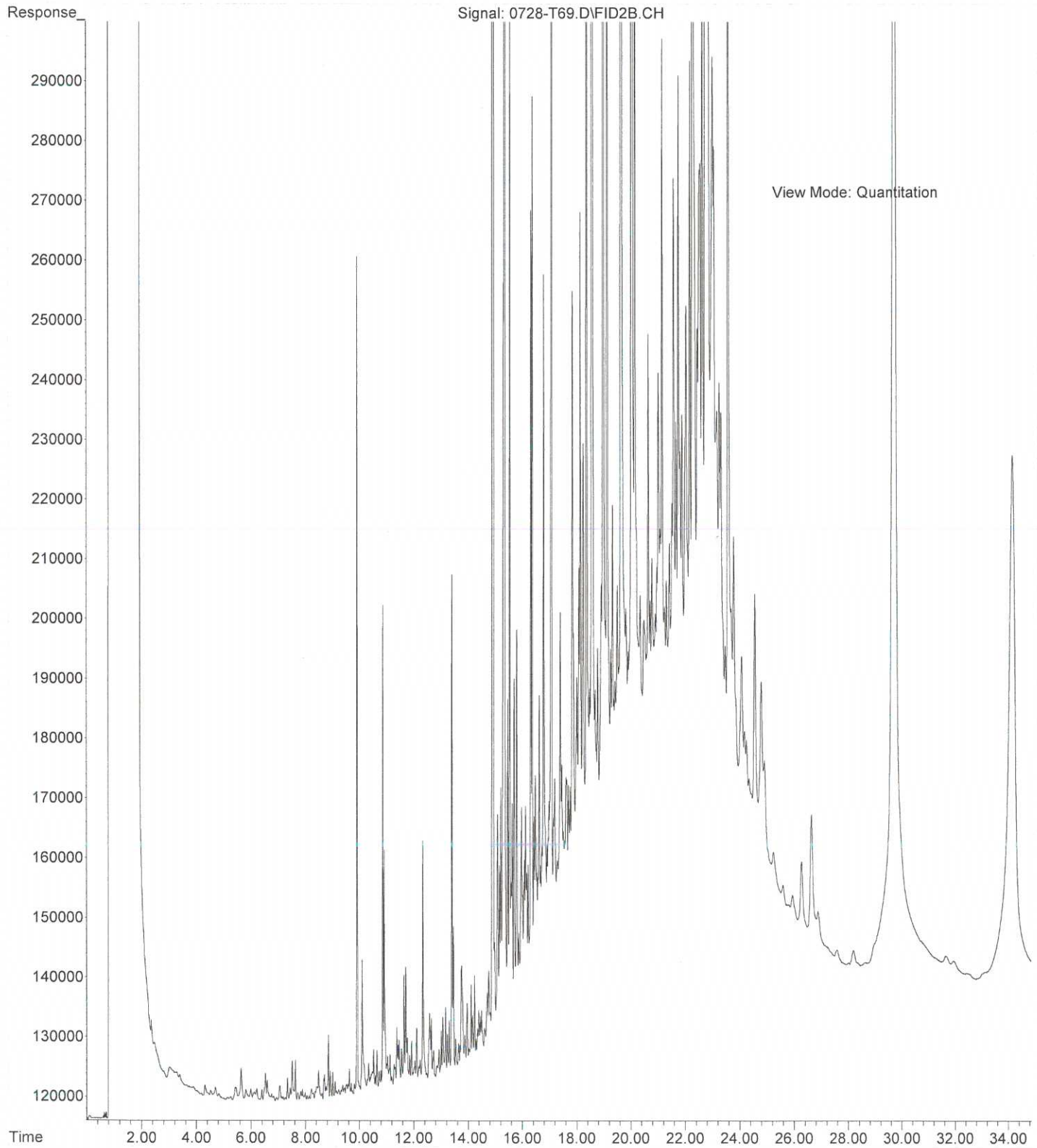
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

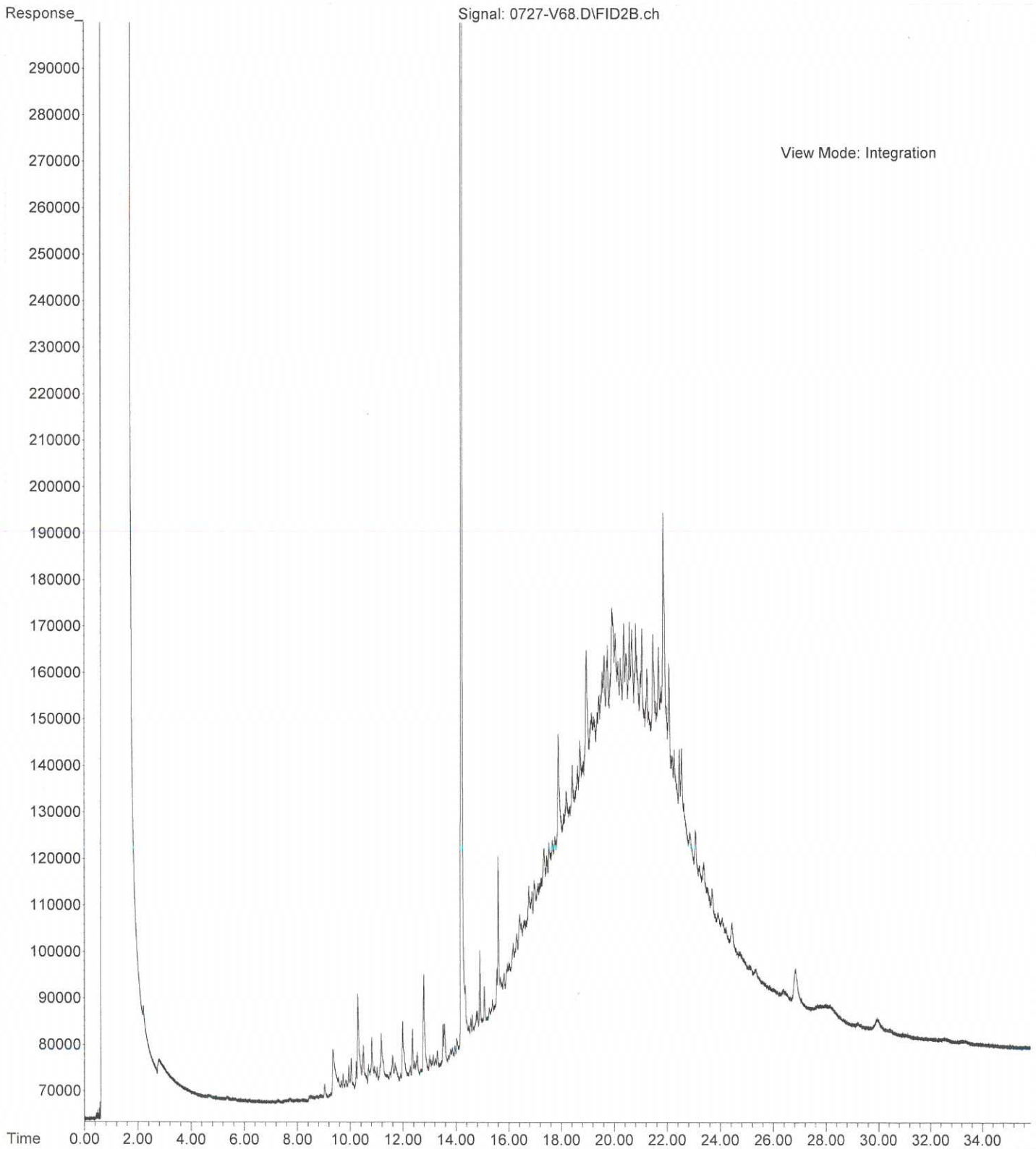
File : D:\BTEX\DATA\D150729\0729006.D
Operator :
Acquired : 29 Jul 2015 13:16 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 07-206-05 RRR
Misc Info :
Vial Number: 6



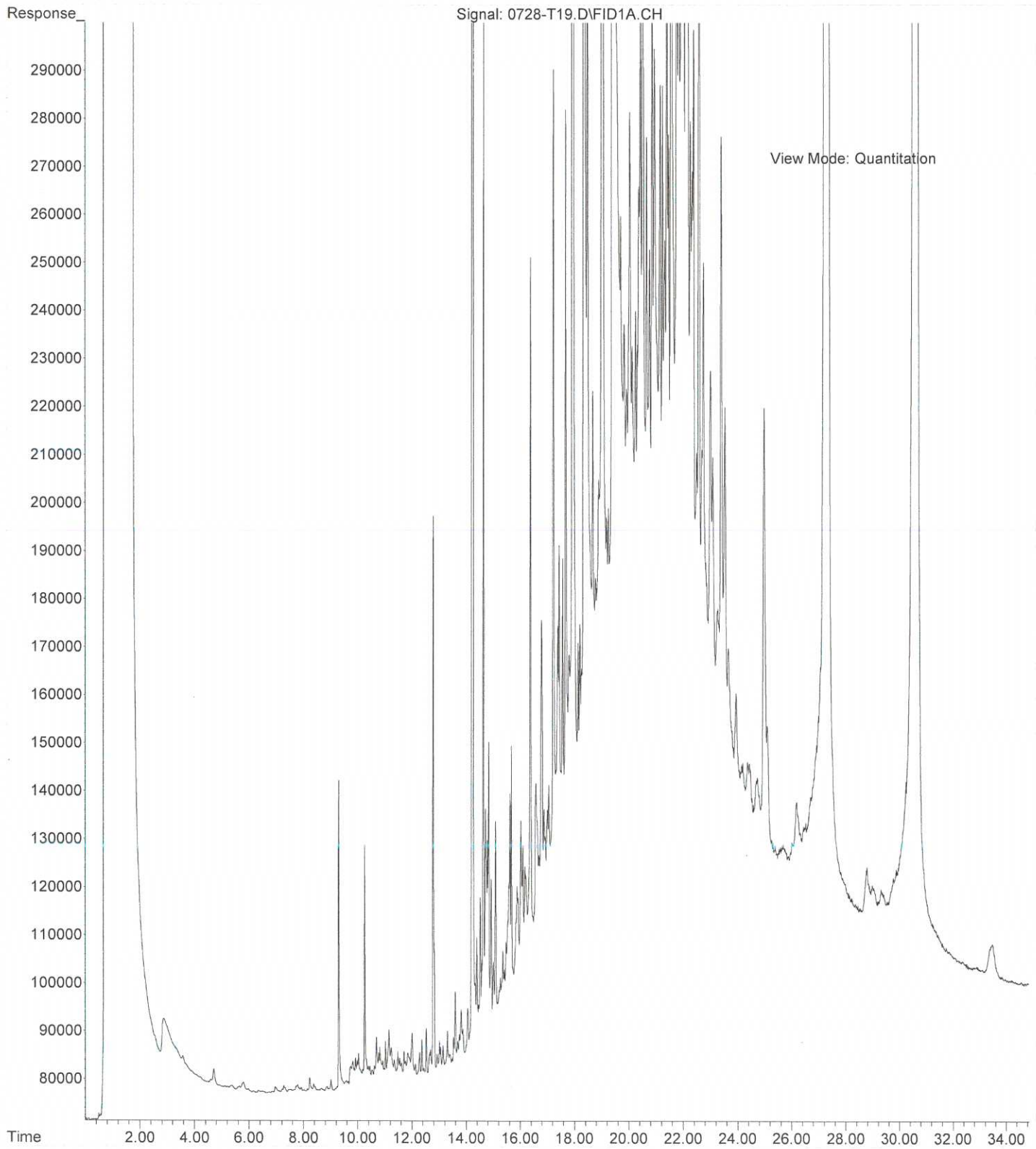
File :X:\DIESELS\TERI\DATA\T150728.SEC\0728-T69.D
Operator : ZT
Acquired : 29 Jul 2015 12:53 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 07-206-01 RR
Misc Info :
Vial Number: 69



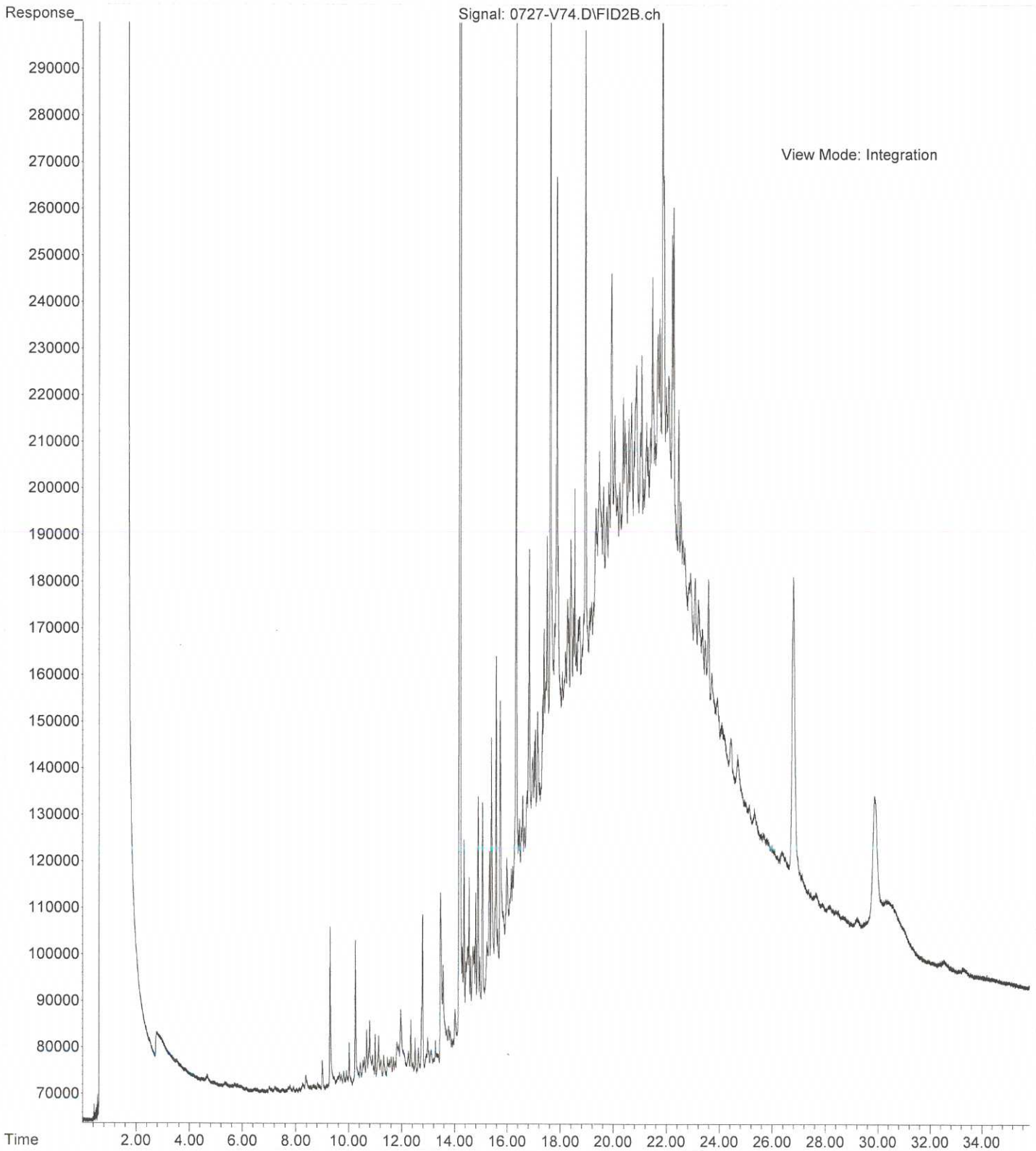
File :X:\DIESELS\VIGO\DATA\V150727.SEC\0727-V68.D
Operator :
Acquired : 28 Jul 2015 00:38 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 07-206-02
Misc Info :
Vial Number: 68



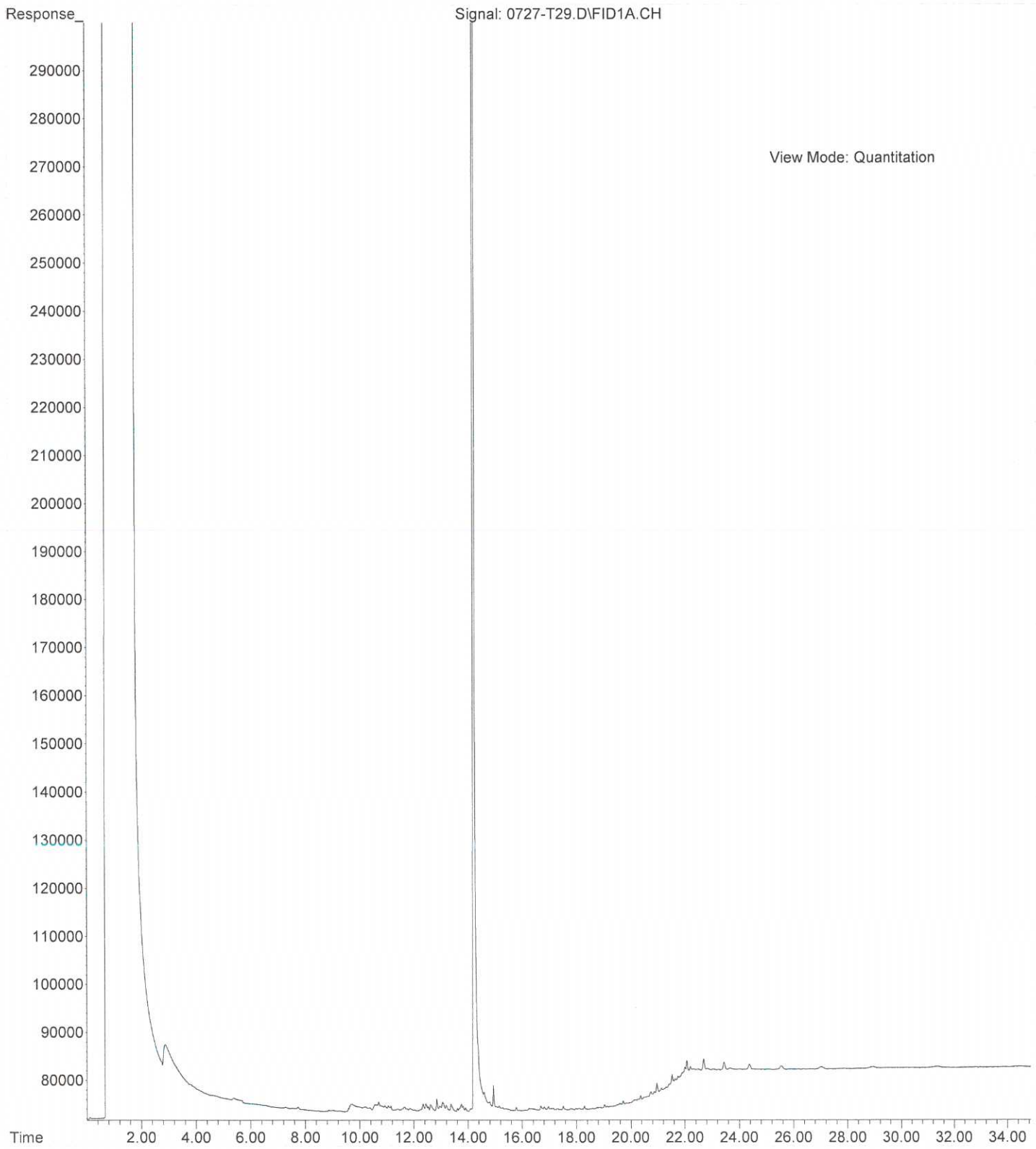
File : X:\DIESELS\TERI\DATA\T150728\0728-T19.D
Operator : ZT
Acquired : 29 Jul 2015 12:53 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 07-206-03 RR
Misc Info :
Vial Number: 19



File :X:\DIESELS\VIGO\DATA\V150727.SEC\0727-V74.D
Operator :
Acquired : 28 Jul 2015 4:43 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 07-206-04
Misc Info :
Vial Number: 74



File :X:\DIESELS\TERI\DATA\T150727\0727-T29.D
Operator : ZT
Acquired : 28 Jul 2015 8:42 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 07-206-05
Misc Info :
Vial Number: 29



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 3, 2015

Fasih Khan
GeoEngineers, Inc.
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Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1507-254

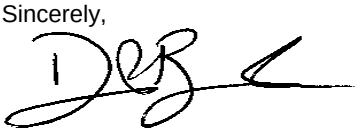
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on July 31, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

Case Narrative

Samples were collected on July 31, 2015 and received by the laboratory on July 31, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

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Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS-5	07-254-01	Soil	7-31-15	7-31-15	

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-5**					
Laboratory ID:	07-254-01					
Benzene	**ND**	0.022	EPA 8021B	7-31-15	7-31-15	
Toluene	**ND**	0.11	EPA 8021B	7-31-15	7-31-15	
Ethyl Benzene	**ND**	0.11	EPA 8021B	7-31-15	7-31-15	
m,p-Xylene	**ND**	0.11	EPA 8021B	7-31-15	7-31-15	
o-Xylene	**ND**	0.11	EPA 8021B	7-31-15	7-31-15	
Gasoline	**ND**	11	NWTPH-Gx	7-31-15	7-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*68-123*				

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Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-5**					
Laboratory ID:	07-254-01					
Diesel Range Organics	**ND**	40	NWTPH-Dx	7-31-15	7-31-15	U1
Lube Oil	**300**	55	NWTPH-Dx	7-31-15	7-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*70*	*50-150*				

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Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0731S2					
Benzene	**ND**	0.020	EPA 8021B			
Toluene	**ND**	0.050	EPA 8021B			
Ethyl Benzene	**ND**	0.050	EPA 8021B			
m,p-Xylene	**ND**	0.050	EPA 8021B			
o-Xylene	**ND**	0.050	EPA 8021B			
Gasoline	**ND**	5.0	NWTPH-Gx			
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-212-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*93*	*93*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0731S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.985**	**1.03**	1.00	1.00		**99**	**103**	75-117	4	13	
Toluene	**0.971**	**1.02**	1.00	1.00		**97**	**102**	78-118	5	12	
Ethyl Benzene	**0.957**	**1.00**	1.00	1.00		**96**	**100**	78-118	4	12	
m,p-Xylene	**0.972**	**1.02**	1.00	1.00		**97**	**102**	78-121	5	13	
o-Xylene	**0.960**	**0.994**	1.00	1.00		**96**	**99**	77-119	3	13	
Surrogate:											
Fluorobenzene						*89*	*93*	*68-123*			

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Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0731S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-31-15	7-31-15	
Lube Oil Range	**ND**	50	NWTPH-Dx	7-31-15	7-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*61*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-242-02										
	ORIG	DUP									
Diesel Fuel #2	**4950**	**3390**	NA	NA		NA		NA	37	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	U1
Surrogate:											
o-Terphenyl						*121*	*111*	*50-150*			

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Date of Report: August 3, 2015
Samples Submitted: July 31, 2015
Laboratory Reference: 1507-254
Project: 21138-001-03

% MOISTURE

Date Analyzed: 7-31-15

Client ID	Lab ID	% Moisture
SS-5	07-254-01	8

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 07-254

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☒ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	SS-5	7/31/15	0930	S	2		⊗		⊗													X

	Signature	Company	Date	Time
Relinquished		GEI	7/31/15	1155
Received		CO8E	7/31/15	1155
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

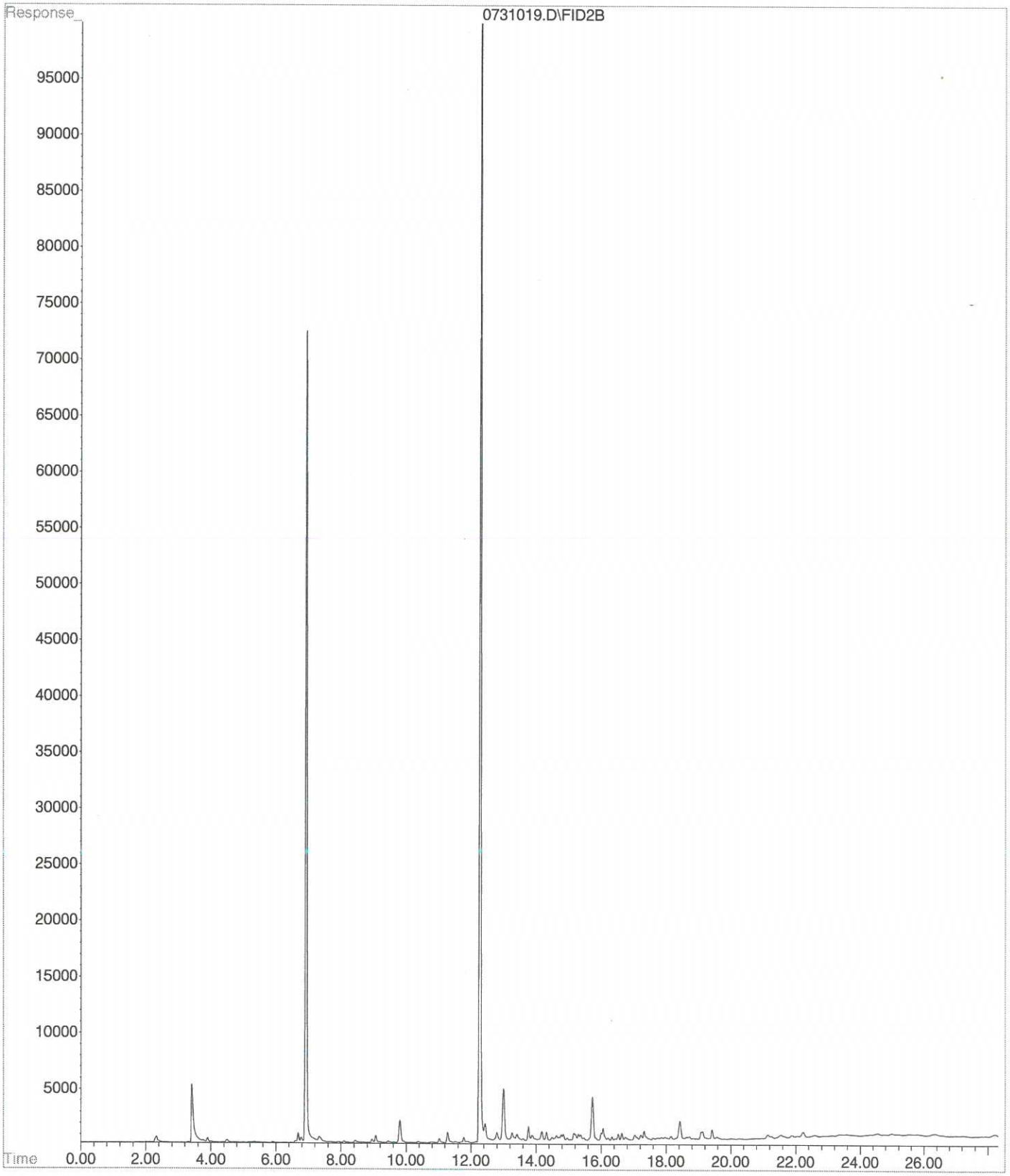
Reviewed/Date

Chromatograms with final report ☐

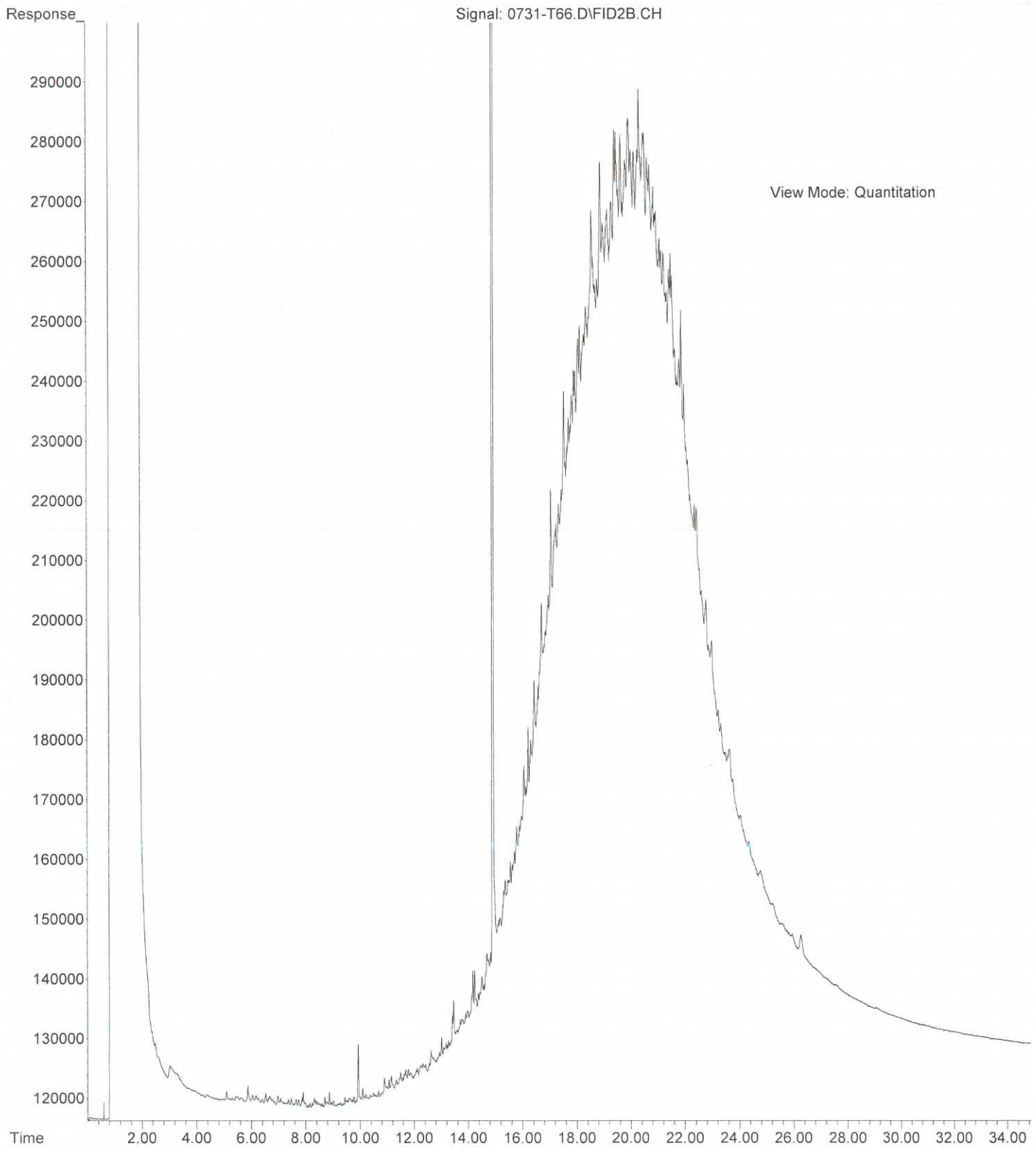
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

File : D:\BTEX\DATA\D150731\0731019.D
Operator :
Acquired : 1 Aug 2015 00:24 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 07-254-01 1:100
Misc Info :
Vial Number: 19



File :X:\DIESELS\TERI\DATA\T150731.SEC\0731-T66.D
Operator : ZT
Acquired : 01 Aug 2015 0:27 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 07-254-01
Misc Info :
Vial Number: 66



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 7, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-030

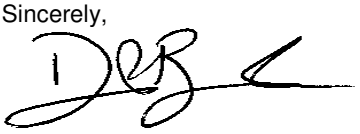
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 6, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

Case Narrative

Samples were collected on August 5, 2015 and received by the laboratory on August 6, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS-6	08-030-01	Soil	8-5-15	8-6-15	
SS-7	08-030-02	Soil	8-5-15	8-6-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-6**					
Laboratory ID:	08-030-01					
Diesel Range Organics	**610**	31	NWTPH-Dx	8-6-15	8-6-15	N
Lube Oil	**2900**	63	NWTPH-Dx	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*72*	*50-150*				
Client ID:	**SS-7**					
Laboratory ID:	08-030-02					
Diesel Range Organics	**43**	35	NWTPH-Dx	8-6-15	8-6-15	
Lube Oil Range Organics	**120**	69	NWTPH-Dx	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

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Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-6**					
Laboratory ID:	08-030-01					
Benzo[a]anthracene	**0.40**	0.017	EPA 8270D/SIM	8-6-15	8-7-15	
Chrysene	**0.40**	0.017	EPA 8270D/SIM	8-6-15	8-7-15	
Benzo[b]fluoranthene	**0.37**	0.0084	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo(j,k)fluoranthene	**0.13**	0.0084	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo[a]pyrene	**0.38**	0.0084	EPA 8270D/SIM	8-6-15	8-6-15	
Indeno(1,2,3-c,d)pyrene	**0.23**	0.0084	EPA 8270D/SIM	8-6-15	8-6-15	
Dibenz[a,h]anthracene	**0.046**	0.0084	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo[g,h,i]perylene	**0.23**	0.0084	EPA 8270D/SIM	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*32 - 114*				
Pyrene-d10	*53*	*33 - 121*				
Terphenyl-d14	*86*	*31 - 116*				

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Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-7**					
Laboratory ID:	08-030-02					
Benzo[a]anthracene	**ND**	0.0093	EPA 8270D/SIM	8-6-15	8-6-15	
Chrysene	**ND**	0.0093	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo[b]fluoranthene	**ND**	0.019	EPA 8270D/SIM	8-6-15	8-7-15	
Benzo(j,k)fluoranthene	**ND**	0.019	EPA 8270D/SIM	8-6-15	8-7-15	
Benzo[a]pyrene	**ND**	0.019	EPA 8270D/SIM	8-6-15	8-7-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.019	EPA 8270D/SIM	8-6-15	8-7-15	
Dibenz[a,h]anthracene	**ND**	0.019	EPA 8270D/SIM	8-6-15	8-7-15	
Benzo[g,h,i]perylene	**ND**	0.019	EPA 8270D/SIM	8-6-15	8-7-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*32 - 114*				
Pyrene-d10	*63*	*33 - 121*				
Terphenyl-d14	*82*	*31 - 116*				

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Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0806S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-6-15	8-6-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-031-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*93* *95*	*50-150*			

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Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0806S2					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*86*	*32 - 114*				
Pyrene-d10	*90*	*33 - 121*				
Terphenyl-d14	*99*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

cPAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0806S2									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0712**	**0.0711**	0.0833	0.0833	85	85	63 - 113	0	19	
Acenaphthylene	**0.0654**	**0.0731**	0.0833	0.0833	79	88	61 - 125	11	16	
Acenaphthene	**0.0684**	**0.0698**	0.0833	0.0833	82	84	66 - 113	2	16	
Fluorene	**0.0747**	**0.0731**	0.0833	0.0833	90	88	60 - 117	2	16	
Phenanthrene	**0.0723**	**0.0693**	0.0833	0.0833	87	83	63 - 116	4	12	
Anthracene	**0.0966**	**0.0845**	0.0833	0.0833	116	101	66 - 146	13	19	
Fluoranthene	**0.0733**	**0.0718**	0.0833	0.0833	88	86	60 - 125	2	13	
Pyrene	**0.0718**	**0.0682**	0.0833	0.0833	86	82	66 - 126	5	15	
Benzo[a]anthracene	**0.0646**	**0.0661**	0.0833	0.0833	78	79	60 - 128	2	15	
Chrysene	**0.0749**	**0.0781**	0.0833	0.0833	90	94	60 - 117	4	13	
Benzo[b]fluoranthene	**0.0668**	**0.0694**	0.0833	0.0833	80	83	60 - 131	4	16	
Benzo(j,k)fluoranthene	**0.0687**	**0.0690**	0.0833	0.0833	82	83	57 - 126	0	20	
Benzo[a]pyrene	**0.0700**	**0.0713**	0.0833	0.0833	84	86	62 - 136	2	16	
Indeno(1,2,3-c,d)pyrene	**0.0640**	**0.0645**	0.0833	0.0833	77	77	60 - 127	1	19	
Dibenz[a,h]anthracene	**0.0653**	**0.0665**	0.0833	0.0833	78	80	62 - 133	2	22	
Benzo[g,h,i]perylene	**0.0628**	**0.0658**	0.0833	0.0833	75	79	63 - 129	5	22	
Surrogate:										
2-Fluorobiphenyl					*83*	*86*	*32 - 114*			
Pyrene-d10					*90*	*87*	*33 - 121*			
Terphenyl-d14					*92*	*88*	*31 - 116*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 7, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-030
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-6-15

Client ID	Lab ID	% Moisture
SS-6	08-030-01	20
SS-7	08-030-02	28

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

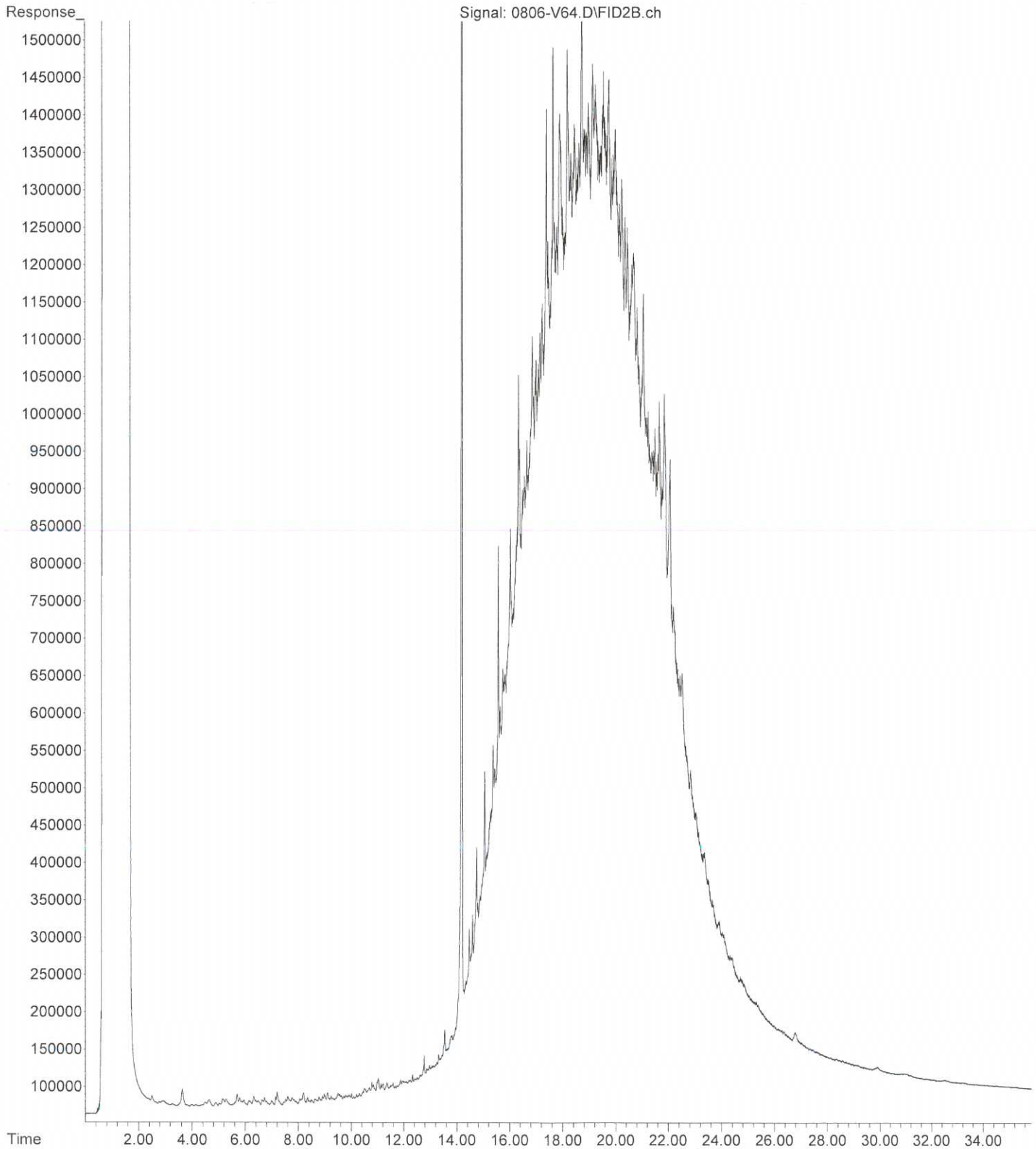
Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

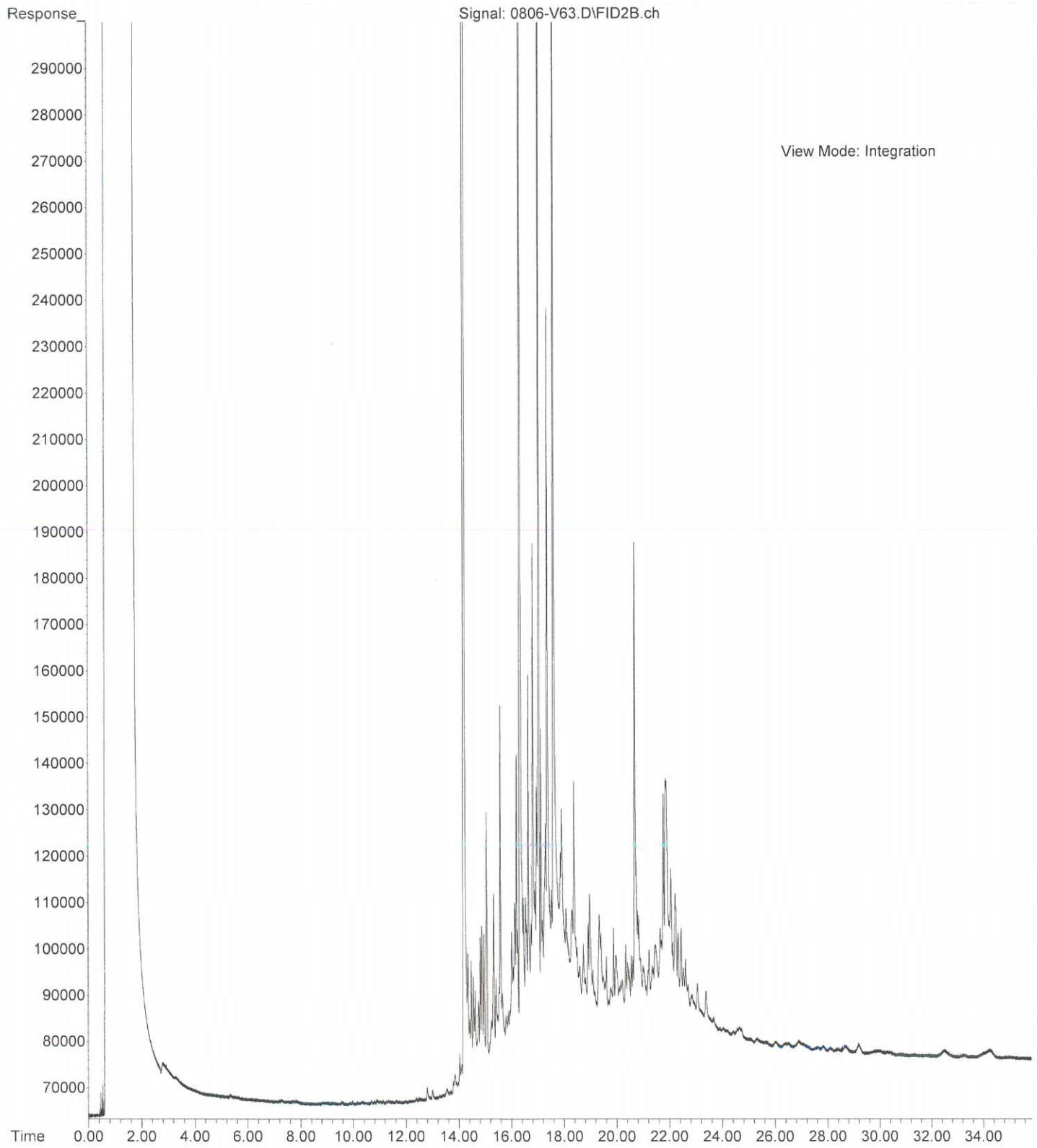
ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

File :X:\DIESELS\VIGO\DATA\V150806.SEC\0806-V64.D
Operator :
Acquired : 6 Aug 2015 22:08 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 08-030-01
Misc Info :
Vial Number: 64



File :X:\DIESELS\VIGO\DATA\V150806.SEC\0806-V63.D
Operator :
Acquired : 6 Aug 2015 21:27 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 08-030-02
Misc Info :
Vial Number: 63



Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☒ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-030

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAHs ONLY					% Moisture
1	SS-6	8/5/15	0930	S	1				X													X					X
2	SS-7	8/5/15	1330	S	1				X													X					X

	Signature	Company	Date	Time
Relinquished		GEI	8/6/15	0740
Received		OSE	8.6.15	7:40
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 14, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-100

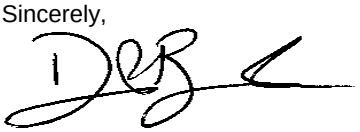
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 12, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

Case Narrative

Samples were collected on August 10 and 11, 2015 and received by the laboratory on August 12, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS-8	08-100-01	Soil	8-10-15	8-12-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-8**					
Laboratory ID:	08-100-01					
Diesel Range Organics	**ND**	35	NWTPH-Dx	8-12-15	8-12-15	
Lube Oil	**76**	71	NWTPH-Dx	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SS-8**					
Laboratory ID:	08-100-01					
Benzo[a]anthracene	**0.019**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Chrysene	**0.026**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Benzo[b]fluoranthene	**0.025**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Benzo(j,k)fluoranthene	**ND**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Benzo[a]pyrene	**0.015**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Indeno(1,2,3-c,d)pyrene	**0.014**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Dibenz[a,h]anthracene	**ND**	0.0094	EPA 8270D/SIM	8-13-15	8-13-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*66*	*32 - 114*				
Pyrene-d10	*57*	*33 - 121*				
Terphenyl-d14	*63*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0812S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-12-15	8-12-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-091-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	U1
Lube Oil	**150**	**143**	NA	NA		NA	NA	5	NA	
Surrogate:										
o-Terphenyl						*87* *90*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0813S2					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-13-15	8-13-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*100*	*32 - 114*				
Pyrene-d10	*88*	*33 - 121*				
Terphenyl-d14	*90*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

cPAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-100-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.144**	**0.168**	0.167	0.167	0.0371	64	78	44 - 107	15	29	
Acenaphthylene	**0.105**	**0.113**	0.167	0.167	ND	63	68	44 - 121	7	27	
Acenaphthene	**0.118**	**0.119**	0.167	0.167	ND	71	71	47 - 109	1	26	
Fluorene	**0.126**	**0.123**	0.167	0.167	ND	75	74	49 - 115	2	28	
Phenanthrene	**0.177**	**0.158**	0.167	0.167	0.0609	70	58	45 - 114	11	26	
Anthracene	**0.169**	**0.160**	0.167	0.167	0.00766	97	91	43 - 140	5	27	
Fluoranthene	**0.136**	**0.125**	0.167	0.167	0.0225	68	61	44 - 126	8	27	
Pyrene	**0.151**	**0.122**	0.167	0.167	0.0197	79	61	43 - 125	21	27	
Benzo[a]anthracene	**0.135**	**0.127**	0.167	0.167	0.0134	73	68	42 - 134	6	27	
Chrysene	**0.132**	**0.126**	0.167	0.167	0.0182	68	65	45 - 114	5	27	
Benzo[b]fluoranthene	**0.129**	**0.128**	0.167	0.167	0.0176	67	66	38 - 131	1	33	
Benzo(j,k)fluoranthene	**0.116**	**0.103**	0.167	0.167	ND	69	62	44 - 114	12	34	
Benzo[a]pyrene	**0.124**	**0.116**	0.167	0.167	0.0104	68	63	40 - 136	7	29	
Indeno(1,2,3-c,d)pyrene	**0.112**	**0.110**	0.167	0.167	0.0101	61	60	45 - 126	2	30	
Dibenz[a,h]anthracene	**0.103**	**0.102**	0.167	0.167	ND	62	61	46 - 121	1	28	
Benzo[g,h,i]perylene	**0.114**	**0.111**	0.167	0.167	0.0105	62	60	43 - 120	3	31	
Surrogate:											
2-Fluorobiphenyl						*64*	*74*	*32 - 114*			
Pyrene-d10						*76*	*64*	*33 - 121*			
Terphenyl-d14						*91*	*70*	*31 - 116*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 14, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-100
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-12-15

Client ID	Lab ID	% Moisture
SS-8	08-100-01	29

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 08-100

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☒ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAHs ONLY		HOLD			% Moisture
1	SS-8	8/10/15	1015	S	1				X													X					X
2	SW-UST-PCS	8/11/15	1140	S	1																			X			

	Signature	Company	Date	Time
Relinquished		GEI	8/12/15	0930
Received			8/12/15	0930
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

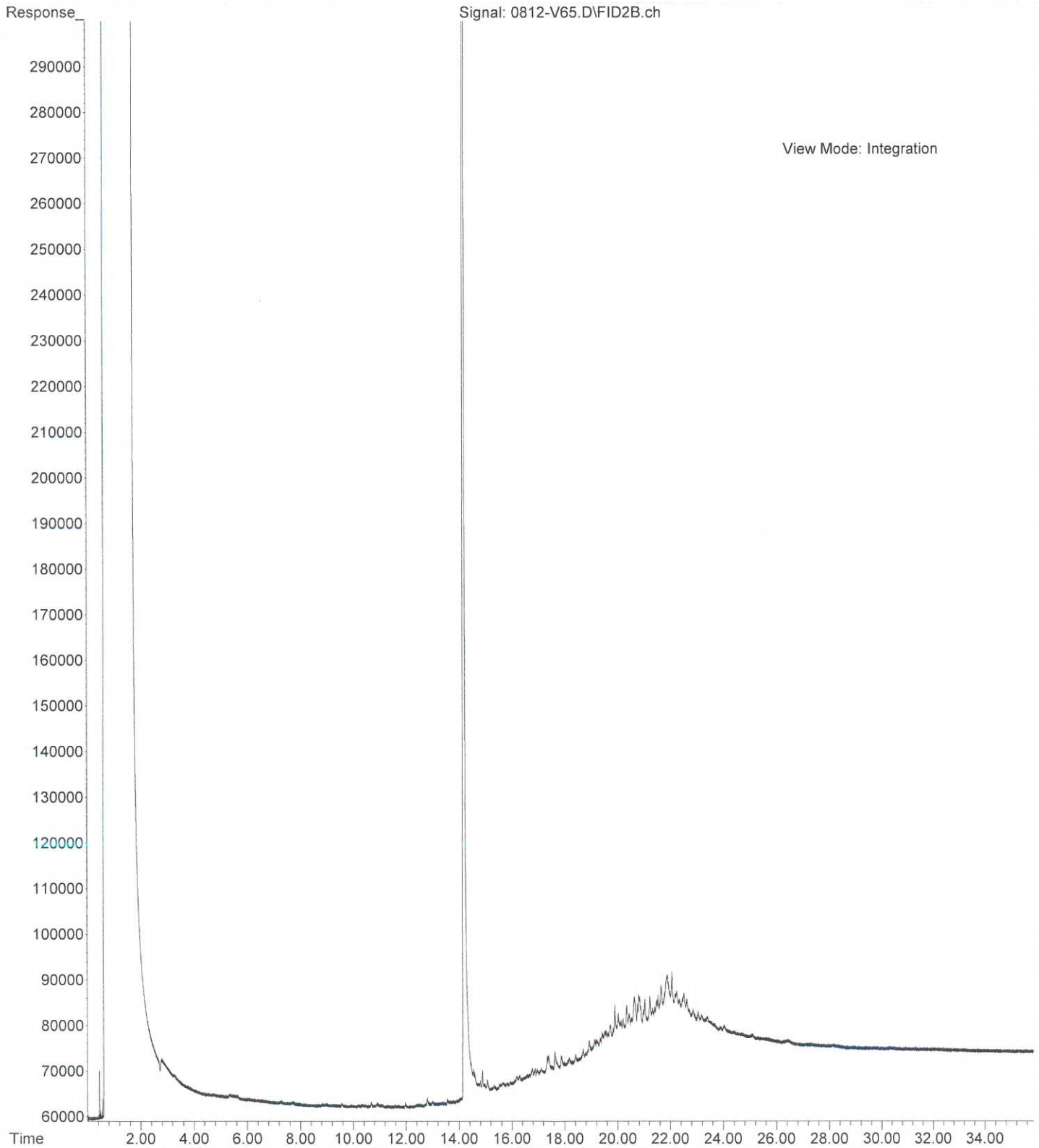
Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

File :X:\DIESELS\VIGO\DATA\V150812.SEC\0812-V65.D
Operator :
Acquired : 12 Aug 2015 21:58 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 08-100-01
Misc Info :
Vial Number: 65



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 28, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-267

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 27, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

Case Narrative

Samples were collected on August 26, 2015 and received by the laboratory on August 27, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2 EX-E-35.0	08-267-01	Soil	8-26-15	8-27-15	
UST2 EX-B1-35.0	08-267-02	Soil	8-26-15	8-27-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-E-35.0**					
Laboratory ID:	08-267-01					
Benzene	**ND**	0.020	EPA 8021B	8-27-15	8-27-15	
Toluene	**ND**	0.069	EPA 8021B	8-27-15	8-27-15	
Ethyl Benzene	**ND**	0.069	EPA 8021B	8-27-15	8-27-15	
m,p-Xylene	**ND**	0.069	EPA 8021B	8-27-15	8-27-15	
o-Xylene	**ND**	0.069	EPA 8021B	8-27-15	8-27-15	
Gasoline	**ND**	6.9	NWTPH-Gx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*68-123*				
Client ID:	**UST2 EX-B1-35.0**					
Laboratory ID:	08-267-02					
Benzene	**ND**	0.020	EPA 8021B	8-27-15	8-27-15	
Toluene	**ND**	0.063	EPA 8021B	8-27-15	8-27-15	
Ethyl Benzene	**ND**	0.063	EPA 8021B	8-27-15	8-27-15	
m,p-Xylene	**ND**	0.063	EPA 8021B	8-27-15	8-27-15	
o-Xylene	**ND**	0.063	EPA 8021B	8-27-15	8-27-15	
Gasoline	**ND**	6.3	NWTPH-Gx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*68-123*				

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-E-35.0**					
Laboratory ID:	08-267-01					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-27-15	8-27-15	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**UST2 EX-B1-35.0**					
Laboratory ID:	08-267-02					
Diesel Range Organics	**ND**	26	NWTPH-Dx	8-27-15	8-27-15	
Lube Oil Range Organics	**ND**	53	NWTPH-Dx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-E-35.0**					
Laboratory ID:	08-267-01					
Naphthalene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
2-Methylnaphthalene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
1-Methylnaphthalene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthylene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Fluorene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Phenanthrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Anthracene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Fluoranthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Pyrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]anthracene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Chrysene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[b]fluoranthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo(j,k)fluoranthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]pyrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[g,h,i]perylene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*62*	*32 - 114*				
Pyrene-d10	*60*	*33 - 121*				
Terphenyl-d14	*63*	*31 - 116*				

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-B1-35.0**					
Laboratory ID:	08-267-02					
Naphthalene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
2-Methylnaphthalene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
1-Methylnaphthalene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthylene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Fluorene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Phenanthrene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Anthracene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Fluoranthene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Pyrene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]anthracene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Chrysene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[b]fluoranthene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo(j,k)fluoranthene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]pyrene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Dibenz[a,h]anthracene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[g,h,i]perylene	**ND**	0.0070	EPA 8270D/SIM	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*55*	*32 - 114*				
Pyrene-d10	*52*	*33 - 121*				
Terphenyl-d14	*54*	*31 - 116*				

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0827S1					
Benzene	**ND**	0.020	EPA 8021B	8-27-15	8-27-15	
Toluene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
o-Xylene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
Gasoline	**ND**	5.0	NWTPH-Gx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-267-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*89*	*94*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0827S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.887**	**0.952**	1.00	1.00		**89**	**95**	75-117	7	13	
Toluene	**0.891**	**0.943**	1.00	1.00		**89**	**94**	78-118	6	12	
Ethyl Benzene	**0.883**	**0.925**	1.00	1.00		**88**	**93**	78-118	5	12	
m,p-Xylene	**0.903**	**0.980**	1.00	1.00		**90**	**98**	78-121	8	13	
o-Xylene	**0.891**	**0.916**	1.00	1.00		**89**	**92**	77-119	3	13	
Surrogate:											
Fluorobenzene						*82*	*84*	*68-123*			

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0827S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-27-15	8-27-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*94*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-267-02										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*83*	*87*	*50-150*			

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0827S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*82*	*32 - 114*				
Pyrene-d10	*87*	*33 - 121*				
Terphenyl-d14	*92*	*31 - 116*				

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

PAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-263-03										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0583**	**0.0615**	0.0833	0.0833	ND	70	74	44 - 107	5	29	
Acenaphthylene	**0.0581**	**0.0652**	0.0833	0.0833	ND	70	78	44 - 121	12	27	
Acenaphthene	**0.0579**	**0.0636**	0.0833	0.0833	ND	70	76	47 - 109	9	26	
Fluorene	**0.0620**	**0.0653**	0.0833	0.0833	ND	74	78	49 - 115	5	28	
Phenanthrene	**0.0598**	**0.0638**	0.0833	0.0833	ND	72	77	45 - 114	6	26	
Anthracene	**0.100**	**0.110**	0.0833	0.0833	ND	120	132	43 - 140	10	27	
Fluoranthene	**0.0584**	**0.0641**	0.0833	0.0833	ND	70	77	44 - 126	9	27	
Pyrene	**0.0582**	**0.0636**	0.0833	0.0833	ND	70	76	43 - 125	9	27	
Benzo[a]anthracene	**0.0680**	**0.0727**	0.0833	0.0833	ND	82	87	42 - 134	7	27	
Chrysene	**0.0597**	**0.0654**	0.0833	0.0833	ND	72	79	45 - 114	9	27	
Benzo[b]fluoranthene	**0.0602**	**0.0651**	0.0833	0.0833	ND	72	78	38 - 131	8	33	
Benzo(j,k)fluoranthene	**0.0575**	**0.0636**	0.0833	0.0833	ND	69	76	44 - 114	10	34	
Benzo[a]pyrene	**0.0580**	**0.0638**	0.0833	0.0833	ND	70	77	40 - 136	10	29	
Indeno(1,2,3-c,d)pyrene	**0.0580**	**0.0623**	0.0833	0.0833	ND	70	75	45 - 126	7	30	
Dibenz[a,h]anthracene	**0.0597**	**0.0646**	0.0833	0.0833	ND	72	78	46 - 121	8	28	
Benzo[g,h,i]perylene	**0.0579**	**0.0626**	0.0833	0.0833	ND	70	75	43 - 120	8	31	
Surrogate:											
2-Fluorobiphenyl						*67*	*84*	*32 - 114*			
Pyrene-d10						*71*	*78*	*33 - 121*			
Terphenyl-d14						*75*	*84*	*31 - 116*			

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Date of Report: August 28, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-267
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-27-15

Client ID	Lab ID	% Moisture
UST2 EX-E-35.0	08-267-01	22
UST2 EX-B1-35.0	08-267-02	5

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 08-267

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☒ Same Day ~~☒ 1 Day~~ 2?
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	VST2EX-E-35.0	8/26/15	0930	S	2		⊗		⊗				⊗														X
2	VST2EX-B1-35.0	8/26/15	0940	S	2		⊗		⊗				⊗														X

	Signature	Company	Date	Time
Relinquished		GET	8/27/15	0855
Received		OSE	8/27/15	0855
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions
Only Gx/BTEX and Dx analysis on One-DAY TAT.
PAHs on 2-day TAT.

Reviewed/Date

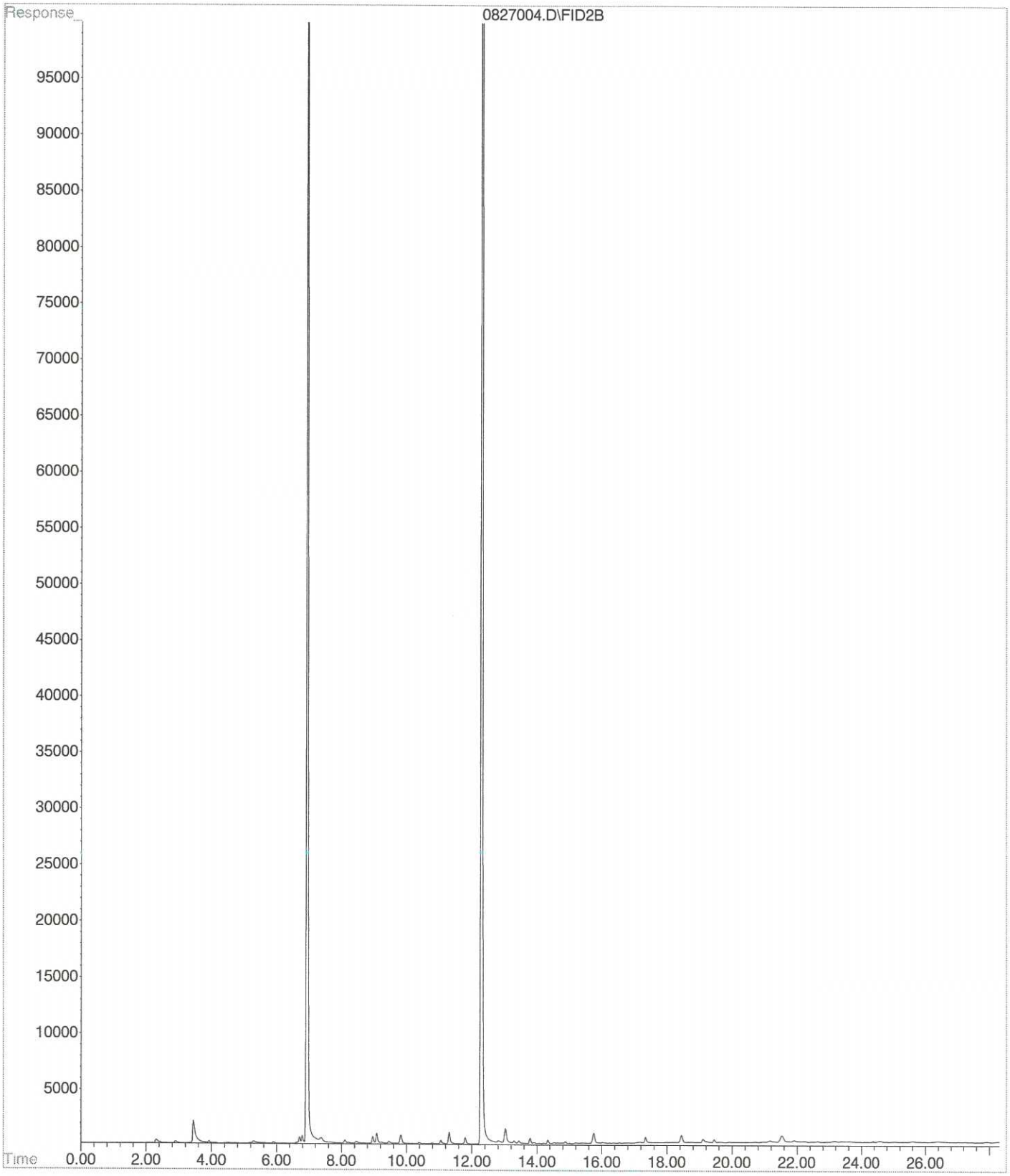
Reviewed/Date

Chromatograms with final report ☐

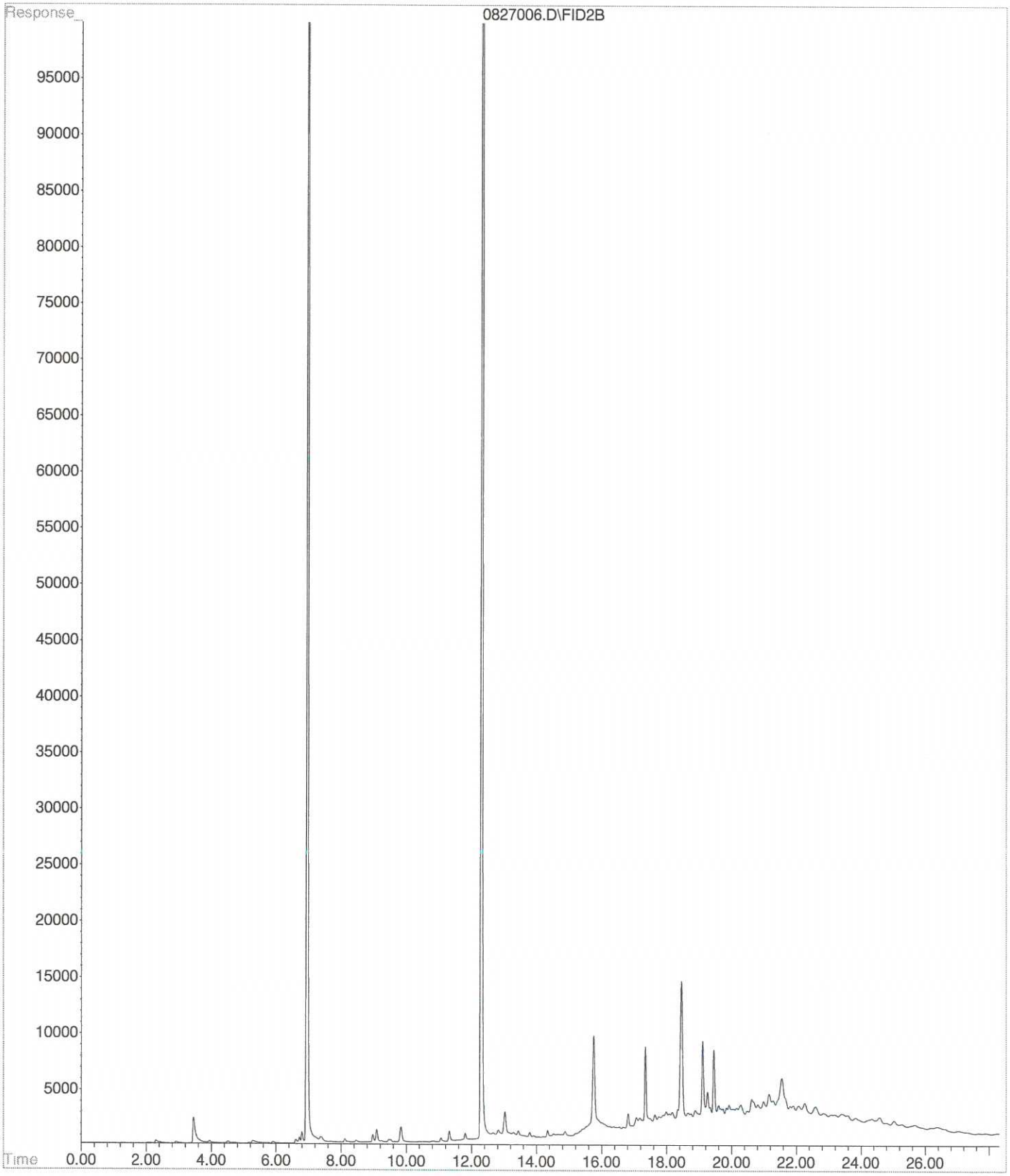
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

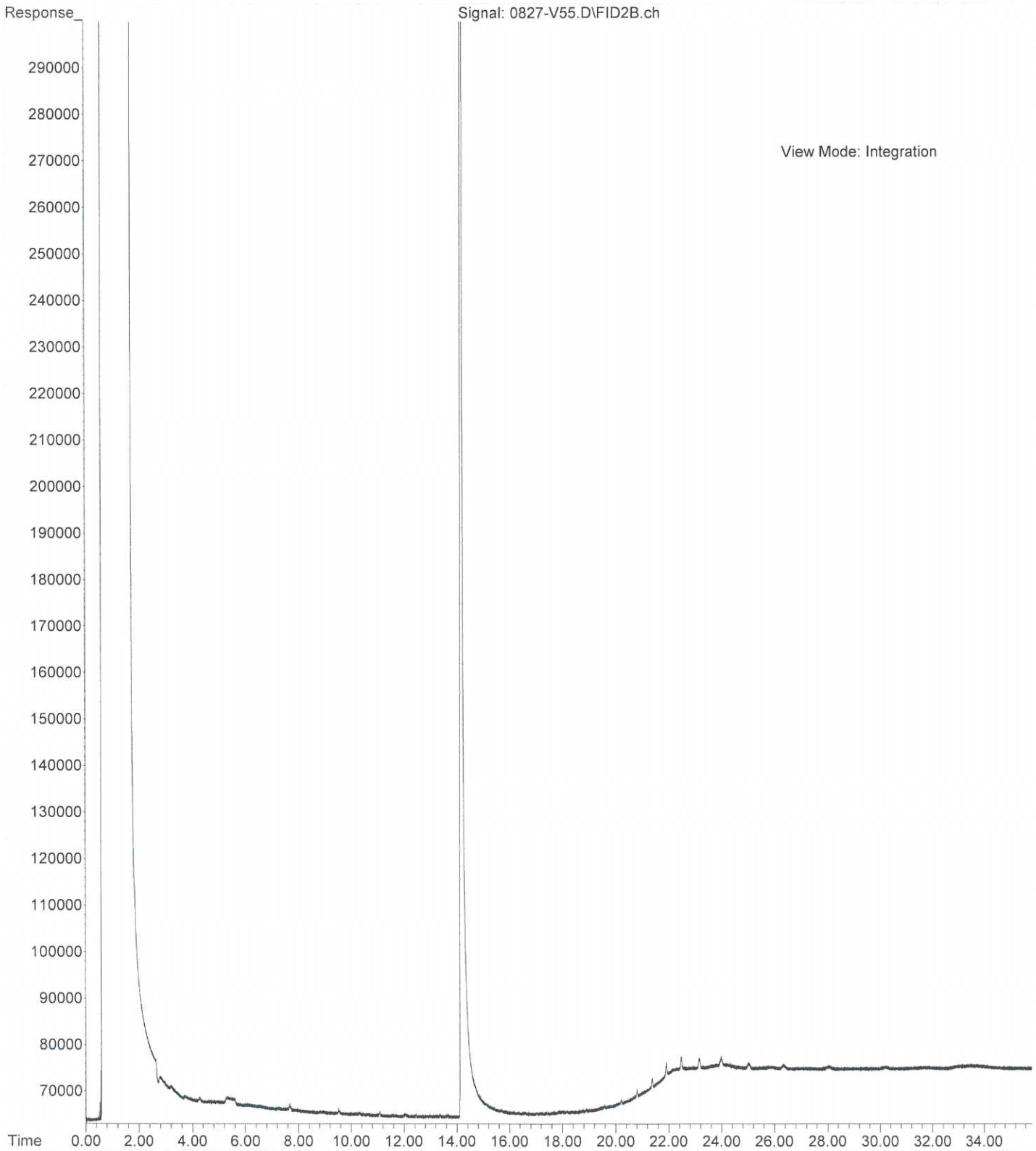
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Operator :
Acquired : 27 Aug 2015 12:40 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-267-01s
Misc Info : V2-37-21
Vial Number: 4



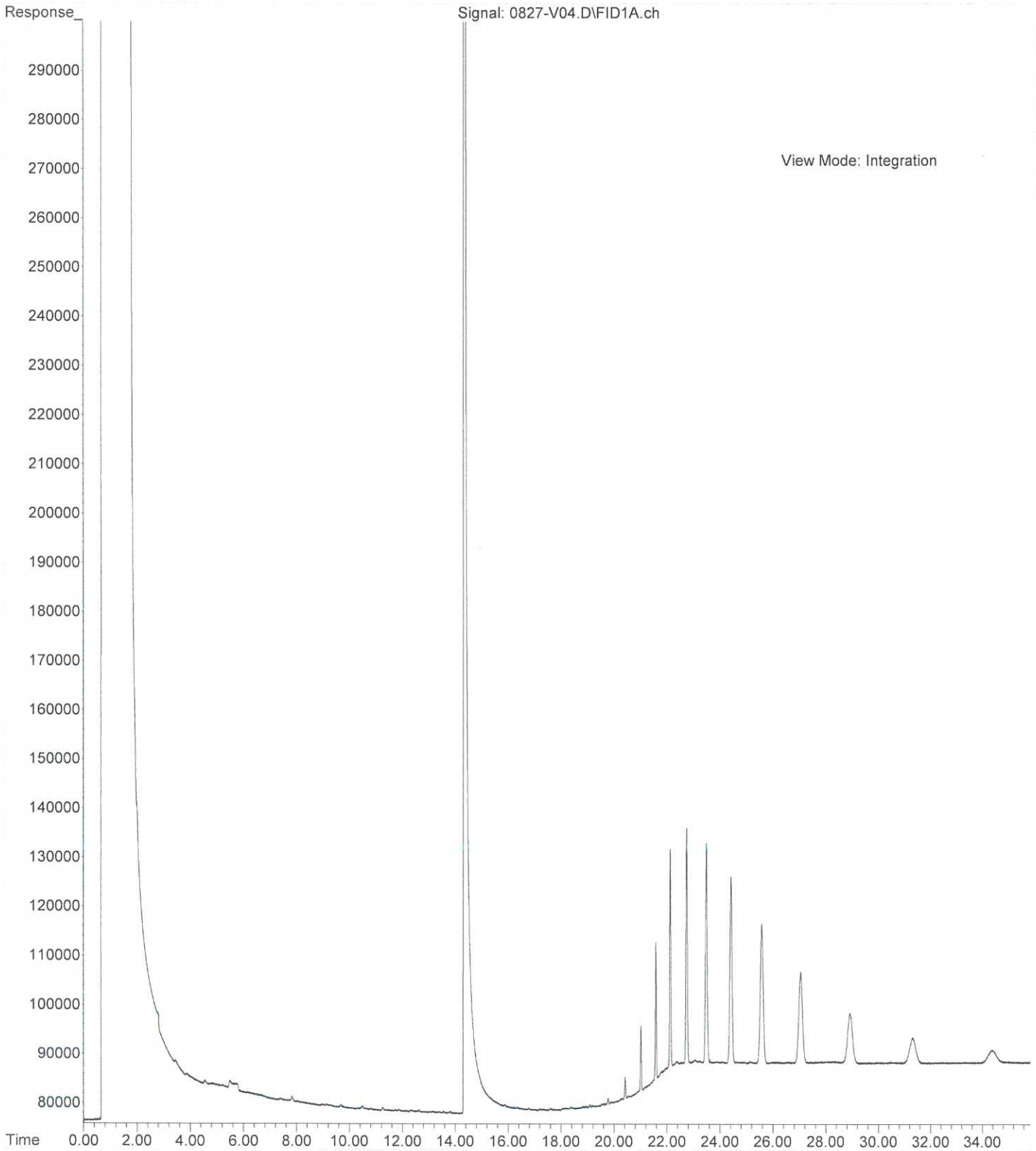
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Operator :
Acquired : 27 Aug 2015 13:49 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-267-02s
Misc Info : V2-37-21
Vial Number: 6



File :X:\DIESELS\VIGO\DATA\V150827.SEC\0827-V55.D
Operator :
Acquired : 27 Aug 2015 13:12 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-267-01
Misc Info :
Vial Number: 55



File :X:\DIESELS\VIGO\DATA\V150827\0827-V04.D
Operator :
Acquired : 27 Aug 2015 12:30 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-267-02
Misc Info :
Vial Number: 4



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 21, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-200

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 19, 2915.

Please note that this is a *revised* report, and replaces the original due to a revision of the sample identification.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

Case Narrative

Samples were collected on August 18, 2015 and received by the laboratory on August 19, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
HOIST-EX-7.0	08-200-01	Soil	8-18-15	8-19-15	
UST2EX-S1-24.0	08-200-02	Soil	8-18-15	8-19-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S1-24.0**					
Laboratory ID:	08-200-02					
Benzene	**ND**	0.020	EPA 8021B	8-19-15	8-19-15	
Toluene	**ND**	0.076	EPA 8021B	8-19-15	8-19-15	
Ethyl Benzene	**ND**	0.076	EPA 8021B	8-19-15	8-19-15	
m,p-Xylene	**ND**	0.076	EPA 8021B	8-19-15	8-19-15	
o-Xylene	**ND**	0.076	EPA 8021B	8-19-15	8-19-15	
Gasoline	**ND**	7.6	NWTPH-Gx	8-19-15	8-19-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**HOIST-EX-7.0**					
Laboratory ID:	08-200-01					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*71*	*50-150*				
Client ID:	**UST2EX-S1-24.0**					
Laboratory ID:	08-200-02					
Diesel Range Organics	**ND**	33	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*73*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0819S1					
Benzene	**ND**	0.020	EPA 8021B	8-19-15	8-19-15	
Toluene	**ND**	0.050	EPA 8021B	8-19-15	8-19-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-19-15	8-19-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-19-15	8-19-15	
o-Xylene	**ND**	0.050	EPA 8021B	8-19-15	8-19-15	
Gasoline	**ND**	5.0	NWTPH-Gx	8-19-15	8-19-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*81*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-097-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*86*	*87*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0819S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.876**	**0.912**	1.00	1.00		**88**	**91**	75-117	4	13	
Toluene	**0.866**	**0.906**	1.00	1.00		**87**	**91**	78-118	5	12	
Ethyl Benzene	**0.851**	**0.892**	1.00	1.00		**85**	**89**	78-118	5	12	
m,p-Xylene	**0.865**	**0.906**	1.00	1.00		**87**	**91**	78-121	5	13	
o-Xylene	**0.866**	**0.902**	1.00	1.00		**87**	**90**	77-119	4	13	
Surrogate:											
Fluorobenzene						*81*	*85*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0820S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-203-04									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil	**71.9**	**65.6**	NA	NA		NA	NA	9	NA	
Surrogate:										
o-Terphenyl						*101* *95*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 19, 2915
Laboratory Reference: 1508-200
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-20-15

Client ID	Lab ID	% Moisture
HOIST-EX-7.0	08-200-01	19
UST2EX-S1-24.0	08-200-02	23

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 08-200

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☒ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX 8/27	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	HOIST-EX-7.0	8/18/15	1005	S	1				⊗													X
2	~~SW-B2-24.0~~ DB 8/21	8/19/15	1330	S	2			⊗	⊗													↓
	~~UST2EX-S2-24.0~~																					
	UST2EX-S1-24.0 DB 12/29/15																					

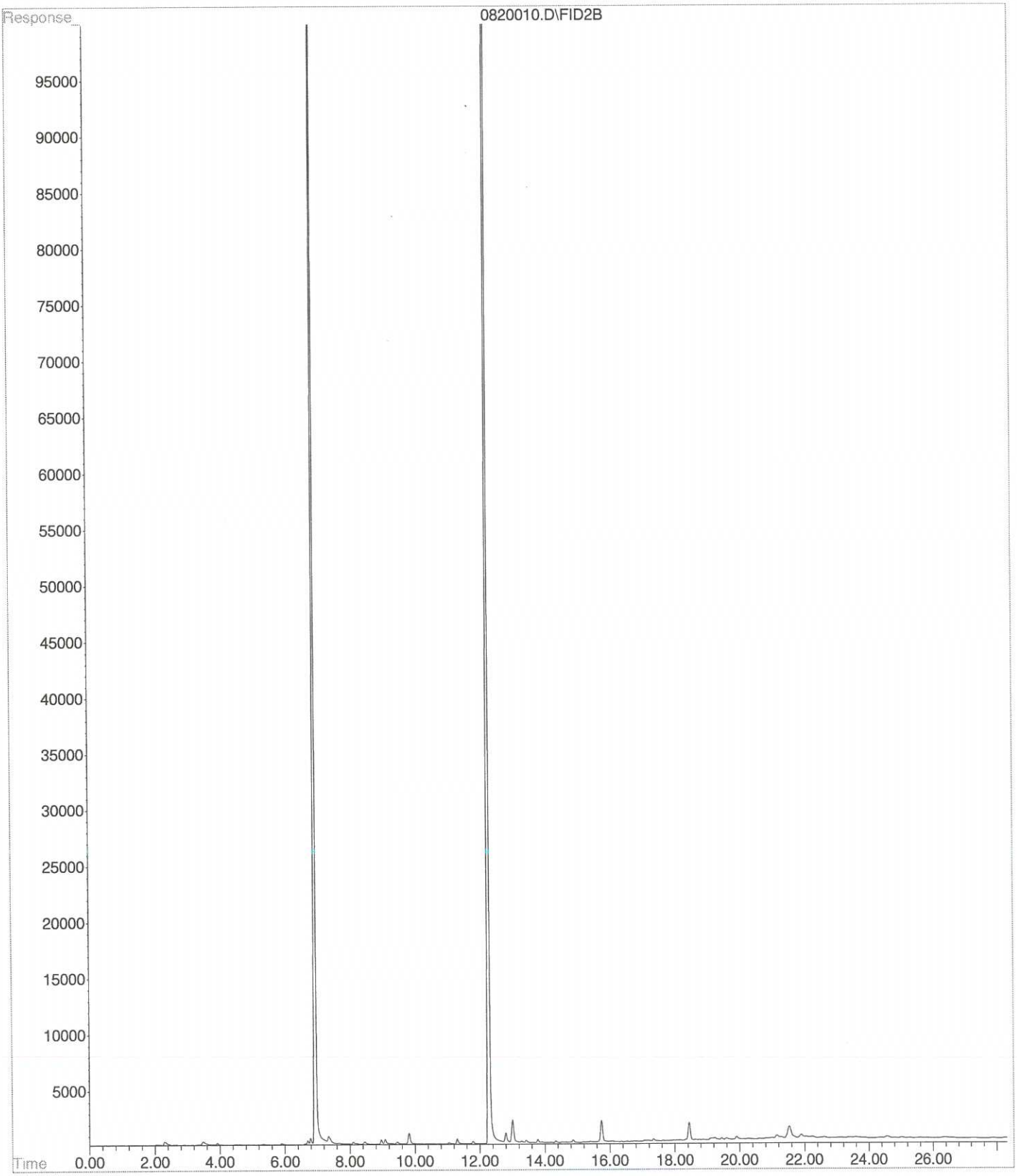
	Signature	Company	Date	Time
Relinquished		GEI	8/19/15	1615
Received		OSE	8/19/15	1615
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

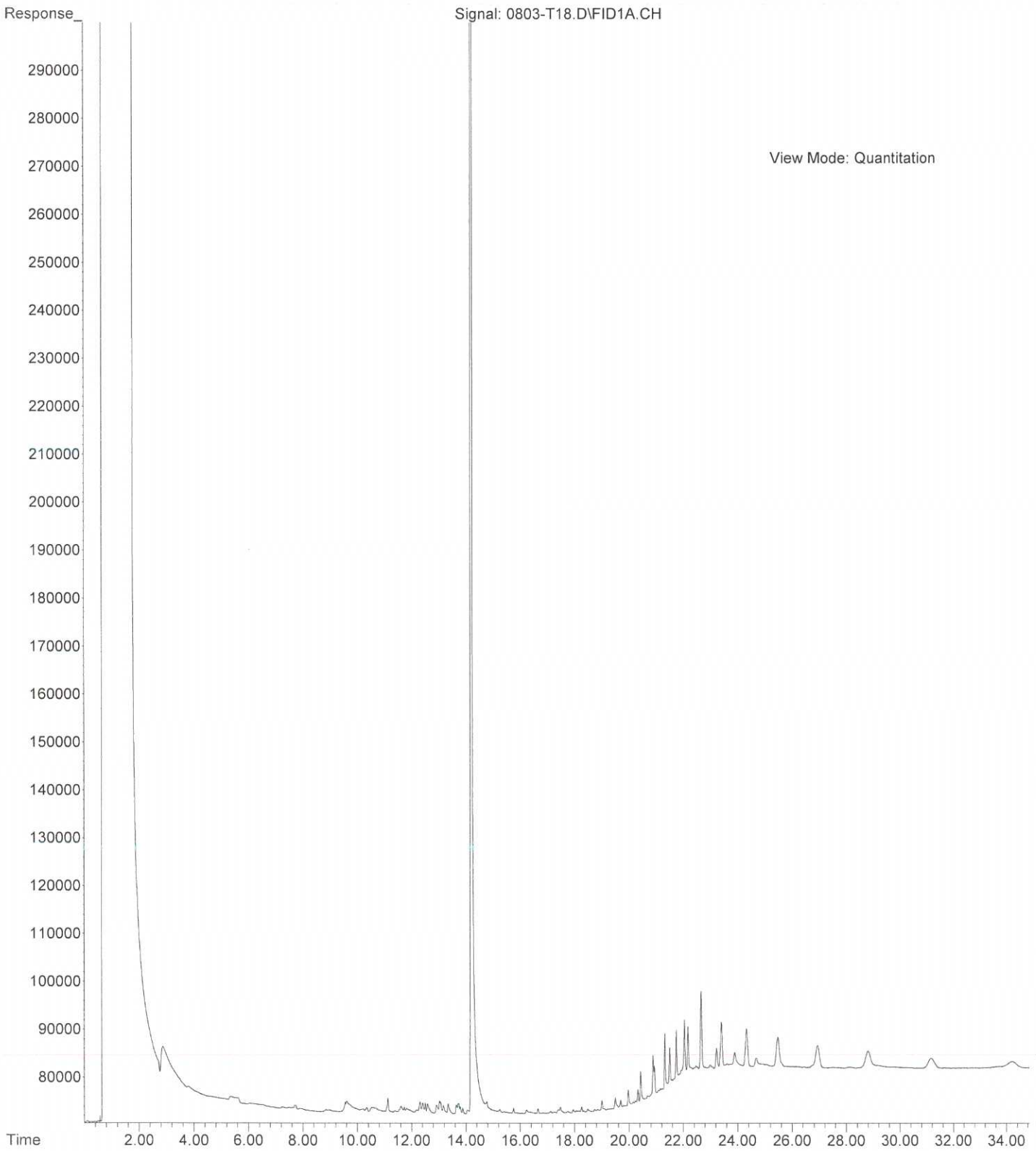
Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

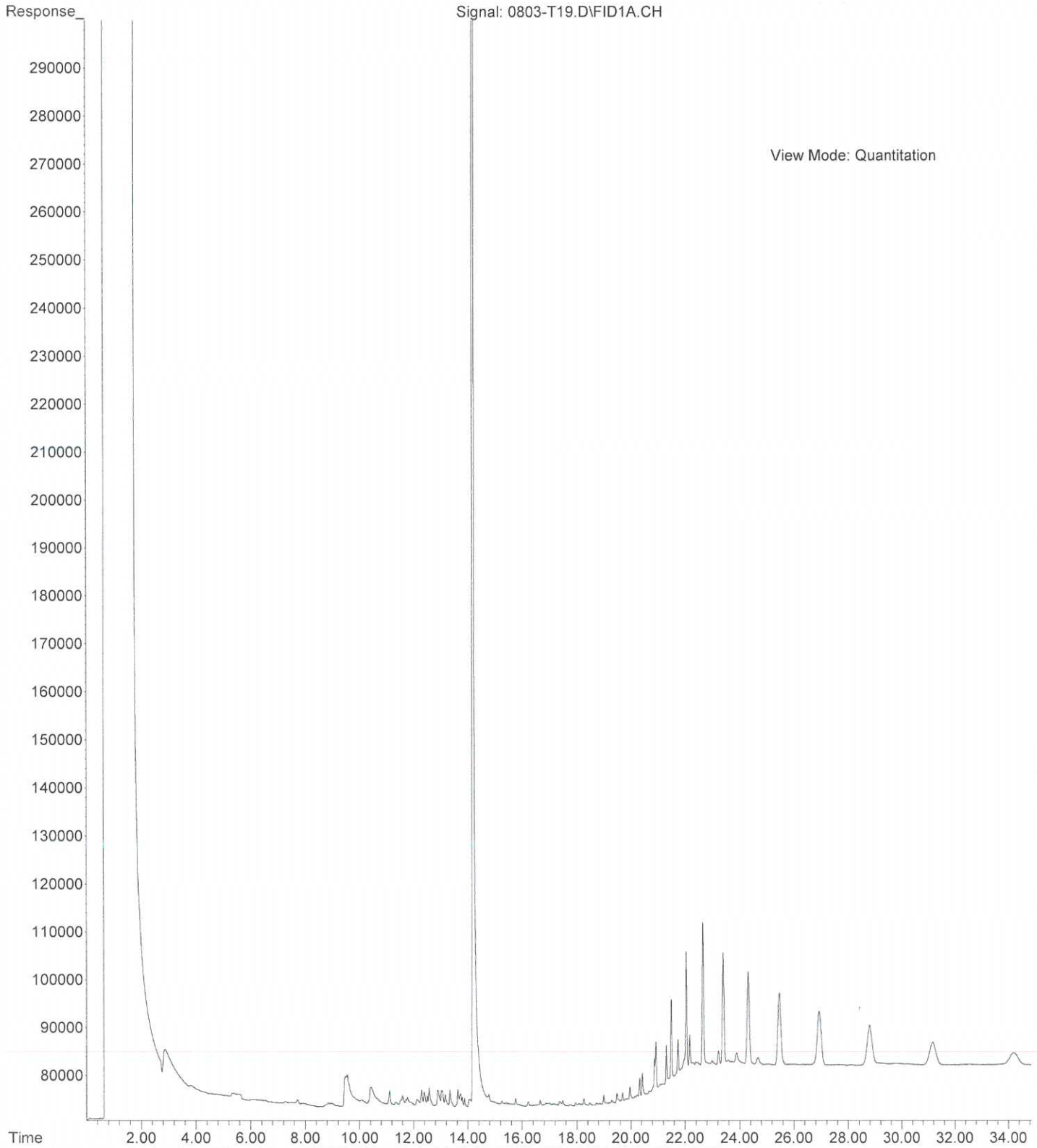
File : X:\BTEX\DARYL\DATA\D150820\0820010.D
Operator :
Acquired : 20 Aug 2015 19:20 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-200-02s
Misc Info : V2-37-21
Vial Number: 10



File :X:\DIESELS\TERI\DATA\T150820\0803-T18.D
Operator : ZT
Acquired : 21 Aug 2015 3:40 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-200-01
Misc Info :
Vial Number: 18



File :X:\DIESELS\TERI\DATA\T150820\0803-T19.D
Operator : ZT
Acquired : 21 Aug 2015 4:23 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-200-02
Misc Info :
Vial Number: 19



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 25, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-216

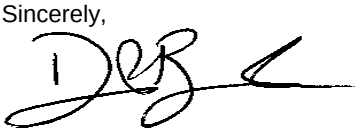
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 21, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

Case Narrative

Samples were collected on August 20, 2015 and received by the laboratory on August 21, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2EX-E-24.0	08-216-01	Soil	8-20-15	8-21-15	
UST2EX-S2-22.0	08-216-02	Soil	8-20-15	8-21-15	
UST2EX-W1-22.0	08-216-03	Soil	8-20-15	8-21-15	
UST2EX-W1-24.0	08-216-04	Soil	8-20-15	8-21-15	
UST2EX-W2-24.0	08-216-05	Soil	8-20-15	8-21-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-E-24.0**					
Laboratory ID:	08-216-01					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-21-15	8-21-15	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	8-21-15	8-21-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*95*	*50-150*				
Client ID:	**UST2EX-S2-22.0**					
Laboratory ID:	08-216-02					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-21-15	8-21-15	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-21-15	8-21-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				
Client ID:	**UST2EX-W1-22.0**					
Laboratory ID:	08-216-03					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-21-15	8-21-15	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	8-21-15	8-21-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				
Client ID:	**UST2EX-W1-24.0**					
Laboratory ID:	08-216-04					
Diesel Range Organics	**1700**	33	NWTPH-Dx	8-21-15	8-21-15	
Lube Oil	**19000**	1300	NWTPH-Dx	8-21-15	8-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*---*	*50-150*				S
Client ID:	**UST2EX-W2-24.0**					
Laboratory ID:	08-216-05					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-21-15	8-21-15	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	8-21-15	8-21-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-E-24.0**					
Laboratory ID:	08-216-01					
Naphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthylene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Fluorene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Phenanthrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Chrysene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*85*	*32 - 114*				
Pyrene-d10	*68*	*33 - 121*				
Terphenyl-d14	*83*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S2-22.0**					
Laboratory ID:	08-216-02					
Naphthalene	**0.0088**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
2-Methylnaphthalene	**0.029**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
1-Methylnaphthalene	**0.019**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthylene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Fluorene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Phenanthrene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Anthracene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Pyrene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]anthracene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Chrysene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[g,h,i]perylene	**ND**	0.0081	EPA 8270D/SIM	8-21-15	8-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*77*	*32 - 114*				
Pyrene-d10	*69*	*33 - 121*				
Terphenyl-d14	*83*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W1-22.0**					
Laboratory ID:	08-216-03					
Naphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthylene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Fluorene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Phenanthrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Chrysene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*79*	*32 - 114*				
Pyrene-d10	*70*	*33 - 121*				
Terphenyl-d14	*87*	*31 - 116*				

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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W1-24.0**					
Laboratory ID:	08-216-04					
Naphthalene	**1.3**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
2-Methylnaphthalene	**2.8**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
1-Methylnaphthalene	**1.9**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Acenaphthylene	**0.036**	0.0089	EPA 8270D/SIM	8-21-15	8-24-15	
Acenaphthene	**0.080**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Fluorene	**0.16**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Phenanthrene	**0.40**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Anthracene	**0.15**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Fluoranthene	**0.21**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Pyrene	**0.42**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Benzo[a]anthracene	**0.17**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Chrysene	**0.15**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Benzo[b]fluoranthene	**0.12**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Benzo(j,k)fluoranthene	**ND**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Benzo[a]pyrene	**0.11**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Indeno(1,2,3-c,d)pyrene	**0.072**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Dibenz[a,h]anthracene	**ND**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Benzo[g,h,i]perylene	**0.13**	0.044	EPA 8270D/SIM	8-21-15	8-24-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*32 - 114*				
Pyrene-d10	*73*	*33 - 121*				
Terphenyl-d14	*100*	*31 - 116*				

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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W2-24.0**					
Laboratory ID:	08-216-05					
Naphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthylene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Fluorene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Phenanthrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Chrysene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270D/SIM	8-21-15	8-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*67*	*32 - 114*				
Pyrene-d10	*59*	*33 - 121*				
Terphenyl-d14	*73*	*31 - 116*				

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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0821S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-21-15	8-21-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-21-15	8-21-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-215-04										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*111*	*99*	*50-150*			

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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0821S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-21-15	8-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*99*	*32 - 114*				
Pyrene-d10	*77*	*33 - 121*				
Terphenyl-d14	*96*	*31 - 116*				

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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0821S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0683**	**0.0624**	0.0833	0.0833	82	75	63 - 113	9	19	
Acenaphthylene	**0.0731**	**0.0651**	0.0833	0.0833	88	78	61 - 125	12	16	
Acenaphthene	**0.0755**	**0.0669**	0.0833	0.0833	91	80	66 - 113	12	16	
Fluorene	**0.0681**	**0.0614**	0.0833	0.0833	82	74	60 - 117	10	16	
Phenanthrene	**0.0645**	**0.0576**	0.0833	0.0833	77	69	63 - 116	11	12	
Anthracene	**0.104**	**0.0933**	0.0833	0.0833	125	112	66 - 146	11	19	
Fluoranthene	**0.0610**	**0.0560**	0.0833	0.0833	73	67	60 - 125	9	13	
Pyrene	**0.0679**	**0.0632**	0.0833	0.0833	82	76	66 - 126	7	15	
Benzo[a]anthracene	**0.0805**	**0.0740**	0.0833	0.0833	97	89	60 - 128	8	15	
Chrysene	**0.0647**	**0.0606**	0.0833	0.0833	78	73	60 - 117	7	13	
Benzo[b]fluoranthene	**0.0654**	**0.0623**	0.0833	0.0833	79	75	60 - 131	5	16	
Benzo(j,k)fluoranthene	**0.0702**	**0.0631**	0.0833	0.0833	84	76	57 - 126	11	20	
Benzo[a]pyrene	**0.0710**	**0.0655**	0.0833	0.0833	85	79	62 - 136	8	16	
Indeno(1,2,3-c,d)pyrene	**0.0687**	**0.0628**	0.0833	0.0833	82	75	60 - 127	9	19	
Dibenz[a,h]anthracene	**0.0655**	**0.0607**	0.0833	0.0833	79	73	62 - 133	8	22	
Benzo[g,h,i]perylene	**0.0689**	**0.0637**	0.0833	0.0833	83	76	63 - 129	8	22	
Surrogate:										
2-Fluorobiphenyl					*105*	*84*	*32 - 114*			
Pyrene-d10					*82*	*76*	*33 - 121*			
Terphenyl-d14					*99*	*94*	*31 - 116*			

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Date of Report: August 25, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-216
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-21-15

Client ID	Lab ID	% Moisture
UST2EX-E-24.0	08-216-01	22
UST2EX-S2-22.0	08-216-02	18
UST2EX-W1-22.0	08-216-03	22
UST2EX-W1-24.0	08-216-04	25
UST2EX-W2-24.0	08-216-05	21

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 08-216

Company:	GEOENGINEERS
Project Number:	21138-001-03
Project Name:	9th & CENORA PROJECT
Project Manager:	FASIH KHAN
Sampled by:	FASIH KHAN

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Days
- ☐ 3 Days
- ☐ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		1 DAY TAT				% Moisture
1	~~SW~~ UST2EX-E-24.0	8/20/15	1330	S	1				X				X														X
2	~~SW~~ UST2EX-S2-22.0	↓	1130	↓	↓				X				X														X
3	~~SW~~ UST2EX-W1-22.0		1310						X				X														X
4	~~SW~~ UST2EX-W1-24.0		1230						X				X										X				X
5	~~SW~~ UST2EX-W2-24.0	↓	1410	↓	↓				X				X														X

	Signature	Company	Date	Time
Relinquished		GEI	8/21/15	0835
Received		OSE	8/21/15	0835
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

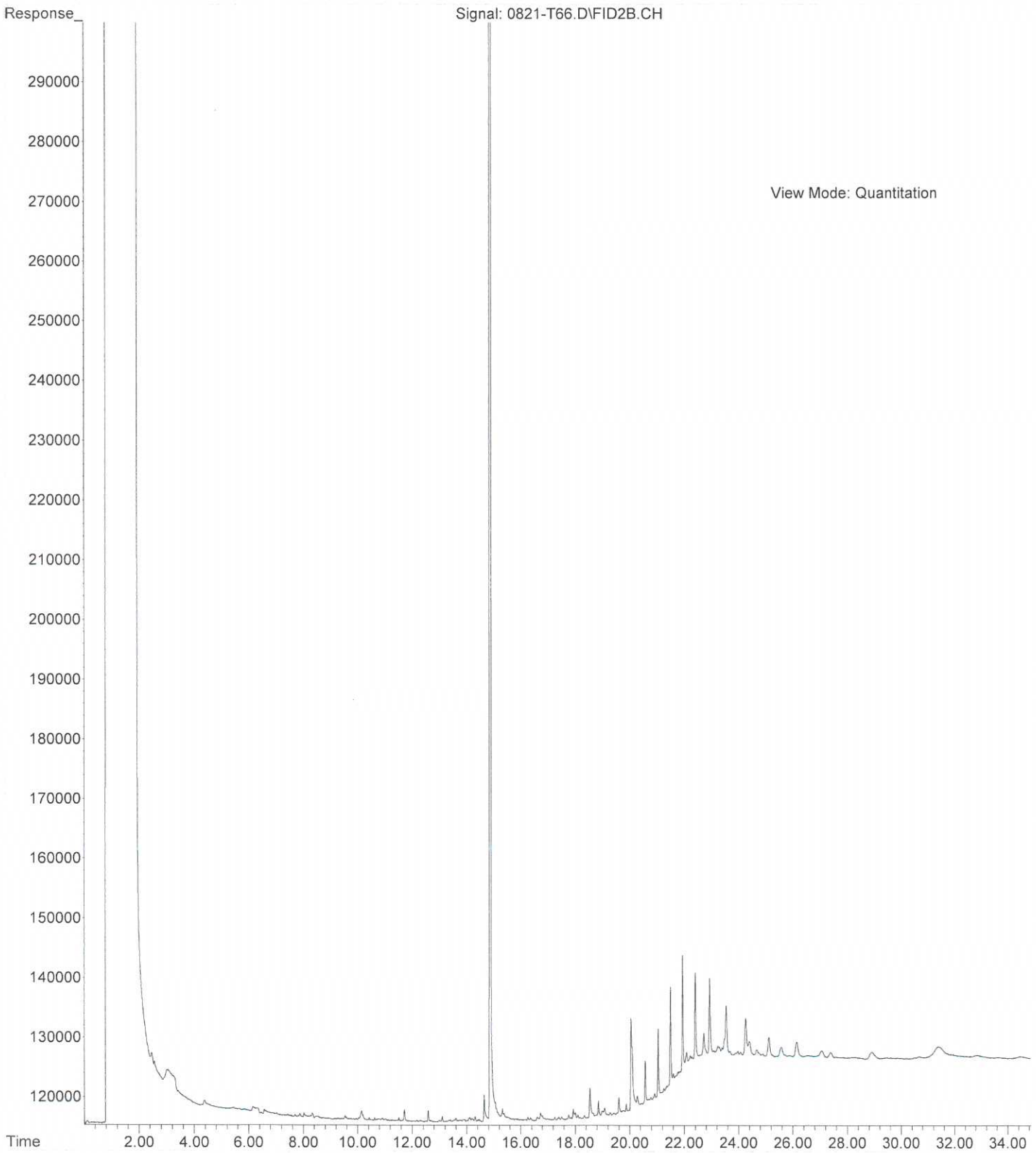
Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

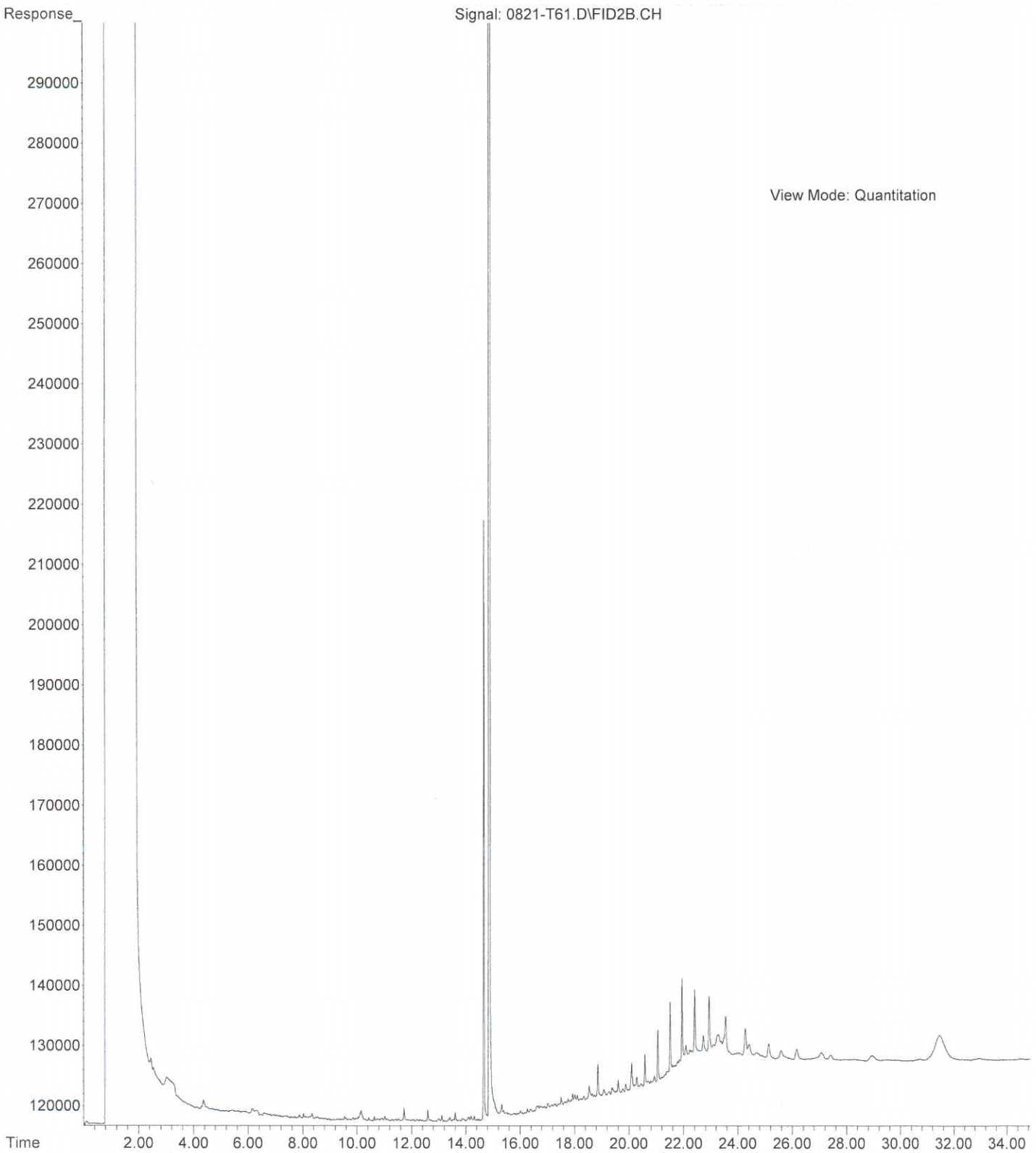
Electronic Data Deliverables (EDDs) ☐ _____

20

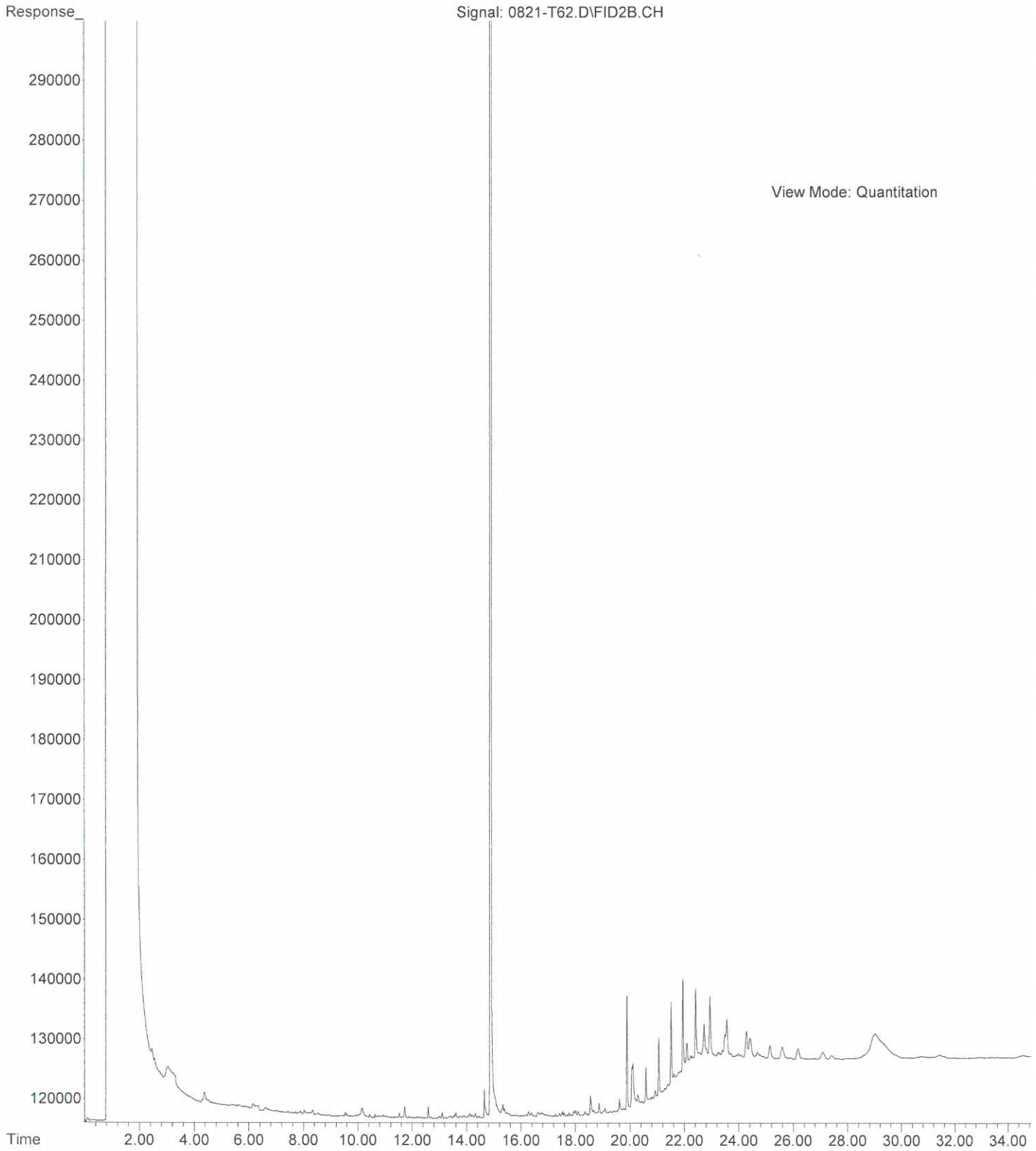
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Acquired : 21 Aug 2015 23:45 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-216-01
Misc Info :
Vial Number: 66



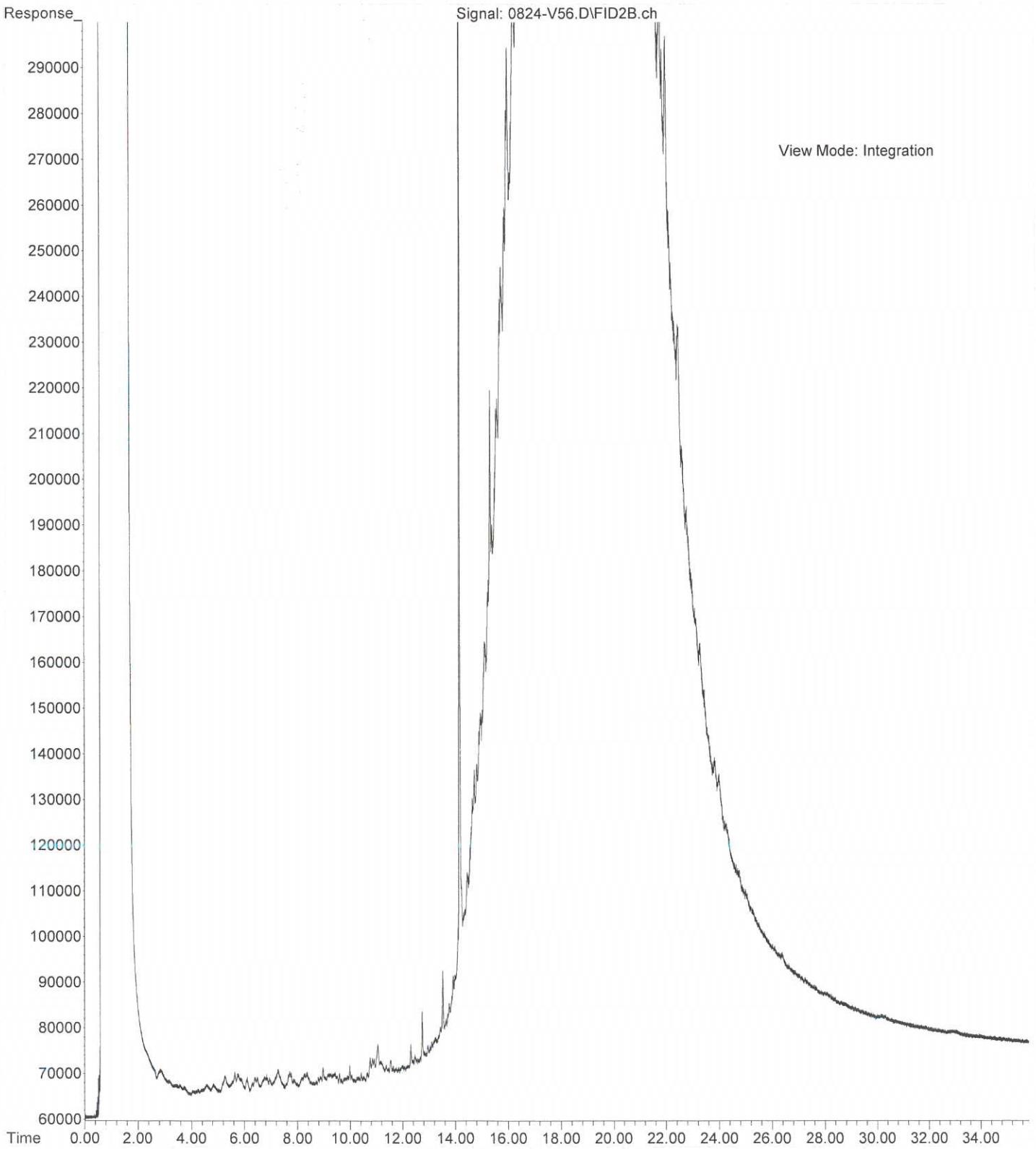
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Operator : ZT
Acquired : 21 Aug 2015 20:09 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-216-02
Misc Info :
Vial Number: 61



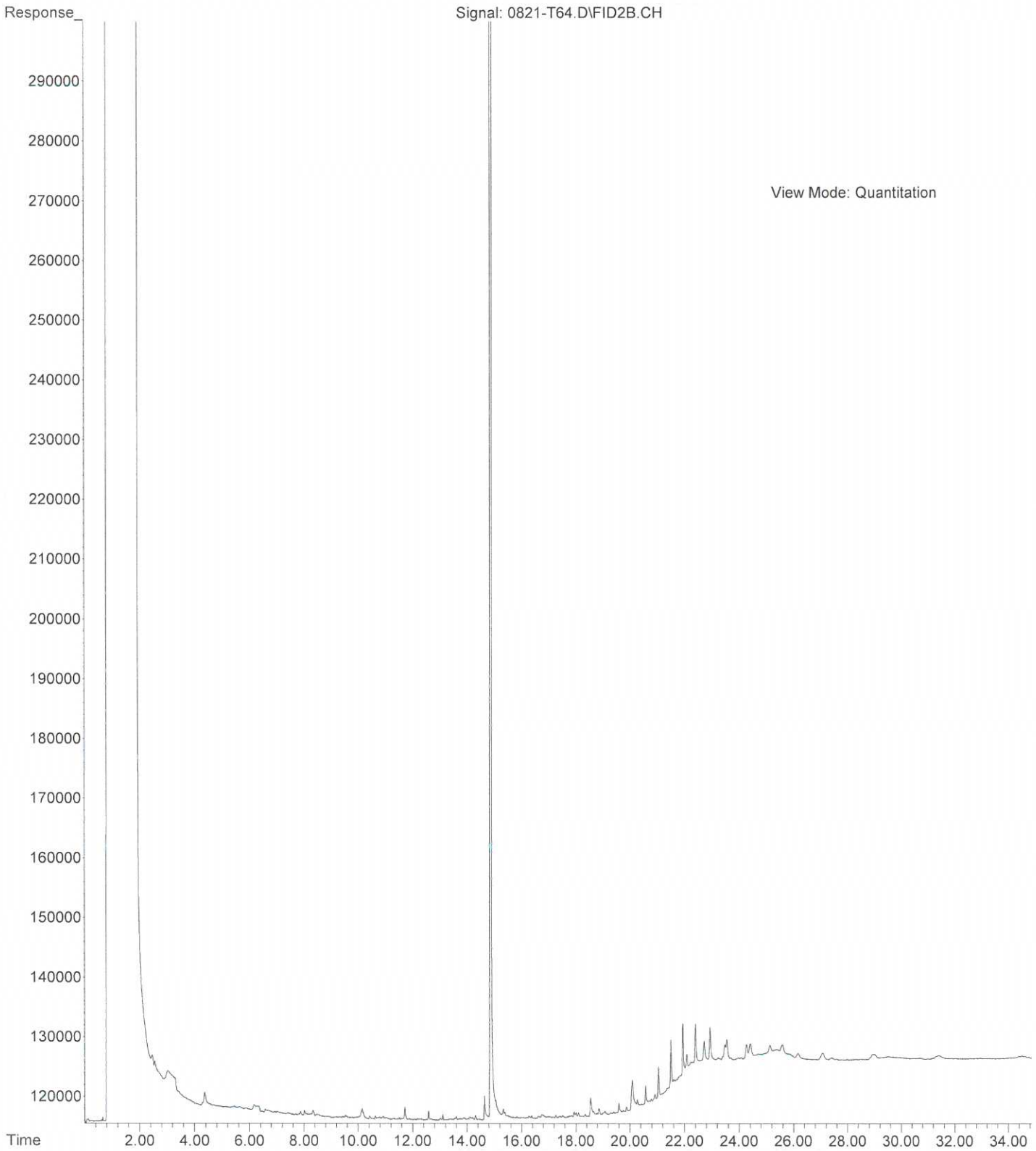
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Operator : ZT
Acquired : 21 Aug 2015 20:52 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-216-03
Misc Info :
Vial Number: 62



File :X:\DIESELS\VIGO\DATA\V150824.SEC\0824-V56.D
Operator :
Acquired : 24 Aug 2015 12:57 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-216-04 20X
Misc Info :
Vial Number: 56



File :X:\DIESELS\TERI\DATA\T150821.SEC\0821-T64.D
Operator : ZT
Acquired : 21 Aug 2015 22:19 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-216-05
Misc Info :
Vial Number: 64



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 1, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-268

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 27, 2015.

Please note that this is a *revised* report, and replaces the original due to a revision of the sample identification.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

Case Narrative

Samples were collected on August 26, 2015 and received by the laboratory on August 27, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2 EX-N-33.0	08-268-01	Soil	8-26-15	8-27-15	
UST2 EX-W3-30.0	08-268-02	Soil	8-26-15	8-27-15	

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-N-33.0**					
Laboratory ID:	08-268-01					
Benzene	**ND**	0.020	EPA 8021B	8-27-15	8-27-15	
Toluene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
Ethyl Benzene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
m,p-Xylene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
o-Xylene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
Gasoline	**ND**	6.4	NWTPH-Gx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*68-123*				
Client ID:	**UST2 EX-W3-30.0**					
Laboratory ID:	08-268-02					
Benzene	**ND**	0.020	EPA 8021B	8-27-15	8-27-15	
Toluene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
Ethyl Benzene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
m,p-Xylene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
o-Xylene	**ND**	0.064	EPA 8021B	8-27-15	8-27-15	
Gasoline	**ND**	6.4	NWTPH-Gx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*111*	*68-123*				

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-N-33.0**					
Laboratory ID:	08-268-01					
Diesel Range Organics	**ND**	33	NWTPH-Dx	8-27-15	8-31-15	
Lube Oil Range Organics	**ND**	66	NWTPH-Dx	8-27-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**UST2 EX-W3-30.0**					
Laboratory ID:	08-268-02					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-27-15	8-31-15	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	8-27-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*99*	*50-150*				

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-N-33.0**					
Laboratory ID:	08-268-01					
Naphthalene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
2-Methylnaphthalene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
1-Methylnaphthalene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthylene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Fluorene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Phenanthrene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Anthracene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Fluoranthene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Pyrene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]anthracene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Chrysene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[b]fluoranthene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo(j,k)fluoranthene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]pyrene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Dibenz[a,h]anthracene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[g,h,i]perylene	**ND**	0.0088	EPA 8270D/SIM	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*58*	*32 - 114*				
Pyrene-d10	*57*	*33 - 121*				
Terphenyl-d14	*60*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2 EX-W3-30.0**					
Laboratory ID:	08-268-02					
Naphthalene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
2-Methylnaphthalene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
1-Methylnaphthalene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthylene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Fluorene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Phenanthrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Anthracene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Fluoranthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Pyrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]anthracene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Chrysene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[b]fluoranthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo(j,k)fluoranthene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]pyrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Dibenz[a,h]anthracene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[g,h,i]perylene	**ND**	0.0086	EPA 8270D/SIM	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*65*	*32 - 114*				
Pyrene-d10	*56*	*33 - 121*				
Terphenyl-d14	*59*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0827S1					
Benzene	**ND**	0.020	EPA 8021B	8-27-15	8-27-15	
Toluene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
o-Xylene	**ND**	0.050	EPA 8021B	8-27-15	8-27-15	
Gasoline	**ND**	5.0	NWTPH-Gx	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-267-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*89*	*94*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0827S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.887**	**0.952**	1.00	1.00		**89**	**95**	75-117	7	13	
Toluene	**0.891**	**0.943**	1.00	1.00		**89**	**94**	78-118	6	12	
Ethyl Benzene	**0.883**	**0.925**	1.00	1.00		**88**	**93**	78-118	5	12	
m,p-Xylene	**0.903**	**0.980**	1.00	1.00		**90**	**98**	78-121	8	13	
o-Xylene	**0.891**	**0.916**	1.00	1.00		**89**	**92**	77-119	3	13	
Surrogate:											
Fluorobenzene						*82*	*84*	*68-123*			

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0827S3					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-27-15	8-31-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-27-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*108*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-246-02										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*103*	*93*	*50-150*			

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0827S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-27-15	8-27-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*82*	*32 - 114*				
Pyrene-d10	*87*	*33 - 121*				
Terphenyl-d14	*92*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

PAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-263-03										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0583**	**0.0615**	0.0833	0.0833	ND	70	74	44 - 107	5	29	
Acenaphthylene	**0.0581**	**0.0652**	0.0833	0.0833	ND	70	78	44 - 121	12	27	
Acenaphthene	**0.0579**	**0.0636**	0.0833	0.0833	ND	70	76	47 - 109	9	26	
Fluorene	**0.0620**	**0.0653**	0.0833	0.0833	ND	74	78	49 - 115	5	28	
Phenanthrene	**0.0598**	**0.0638**	0.0833	0.0833	ND	72	77	45 - 114	6	26	
Anthracene	**0.100**	**0.110**	0.0833	0.0833	ND	120	132	43 - 140	10	27	
Fluoranthene	**0.0584**	**0.0641**	0.0833	0.0833	ND	70	77	44 - 126	9	27	
Pyrene	**0.0582**	**0.0636**	0.0833	0.0833	ND	70	76	43 - 125	9	27	
Benzo[a]anthracene	**0.0680**	**0.0727**	0.0833	0.0833	ND	82	87	42 - 134	7	27	
Chrysene	**0.0597**	**0.0654**	0.0833	0.0833	ND	72	79	45 - 114	9	27	
Benzo[b]fluoranthene	**0.0602**	**0.0651**	0.0833	0.0833	ND	72	78	38 - 131	8	33	
Benzo(j,k)fluoranthene	**0.0575**	**0.0636**	0.0833	0.0833	ND	69	76	44 - 114	10	34	
Benzo[a]pyrene	**0.0580**	**0.0638**	0.0833	0.0833	ND	70	77	40 - 136	10	29	
Indeno(1,2,3-c,d)pyrene	**0.0580**	**0.0623**	0.0833	0.0833	ND	70	75	45 - 126	7	30	
Dibenz[a,h]anthracene	**0.0597**	**0.0646**	0.0833	0.0833	ND	72	78	46 - 121	8	28	
Benzo[g,h,i]perylene	**0.0579**	**0.0626**	0.0833	0.0833	ND	70	75	43 - 120	8	31	
Surrogate:											
2-Fluorobiphenyl						*67*	*84*	*32 - 114*			
Pyrene-d10						*71*	*78*	*33 - 121*			
Terphenyl-d14						*75*	*84*	*31 - 116*			

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Date of Report: September 1, 2015
Samples Submitted: August 27, 2015
Laboratory Reference: 1508-268
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-27-15

Client ID	Lab ID	% Moisture
UST2 EX-N-33.0	08-268-01	24
UST2 EX-W3-30.0	08-268-02	23

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☒ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

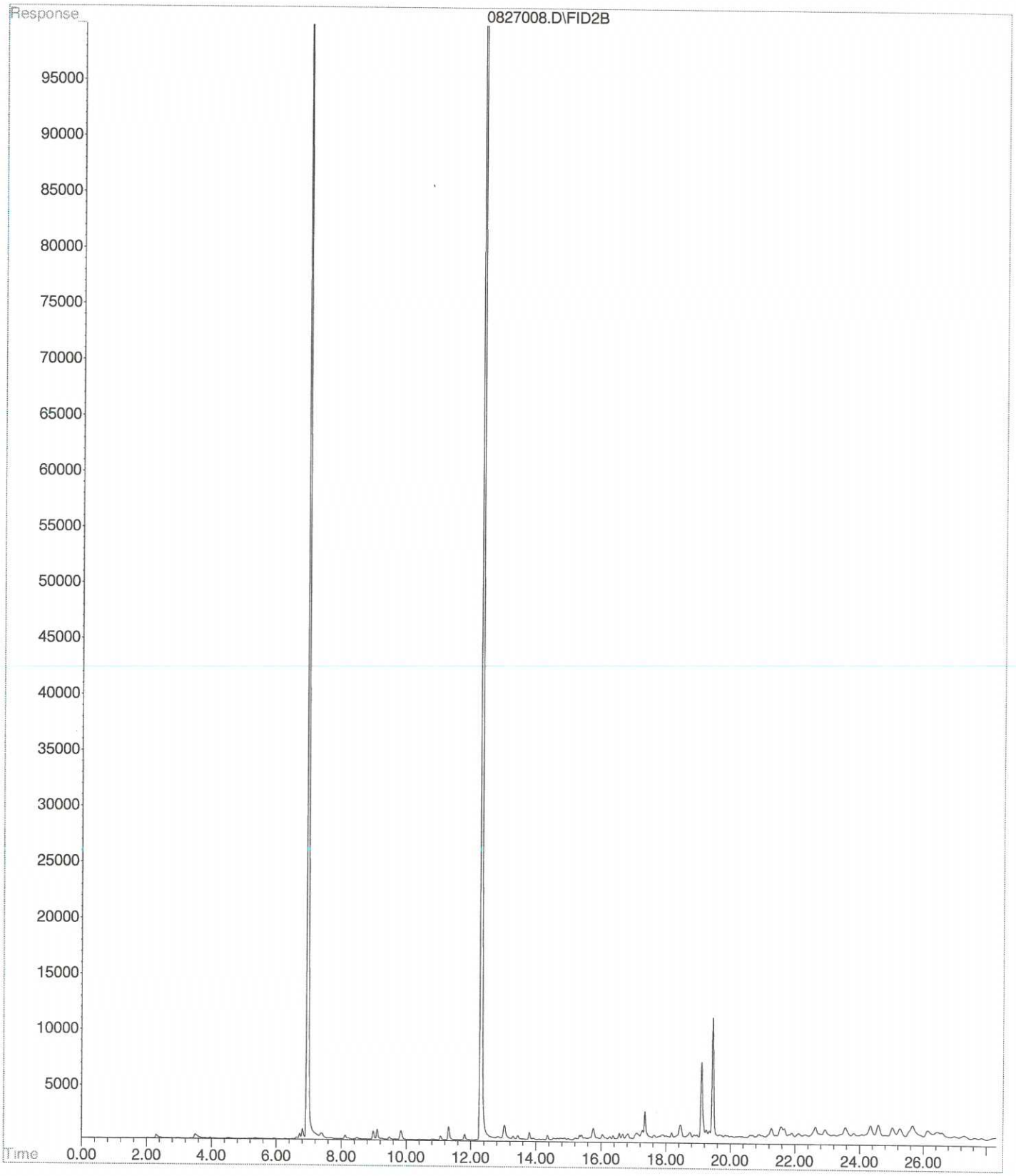
Laboratory Number: 08-268

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx/BTEX	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	VST2EX-N-33.0	8/26/15	1000	S	2			(X)	(X)				(X)														X
2	VST2EX-W3 ~~33.0~~ 30.0 DB	8/26/15	1045	S	2			(X)	(X)				(X)														X

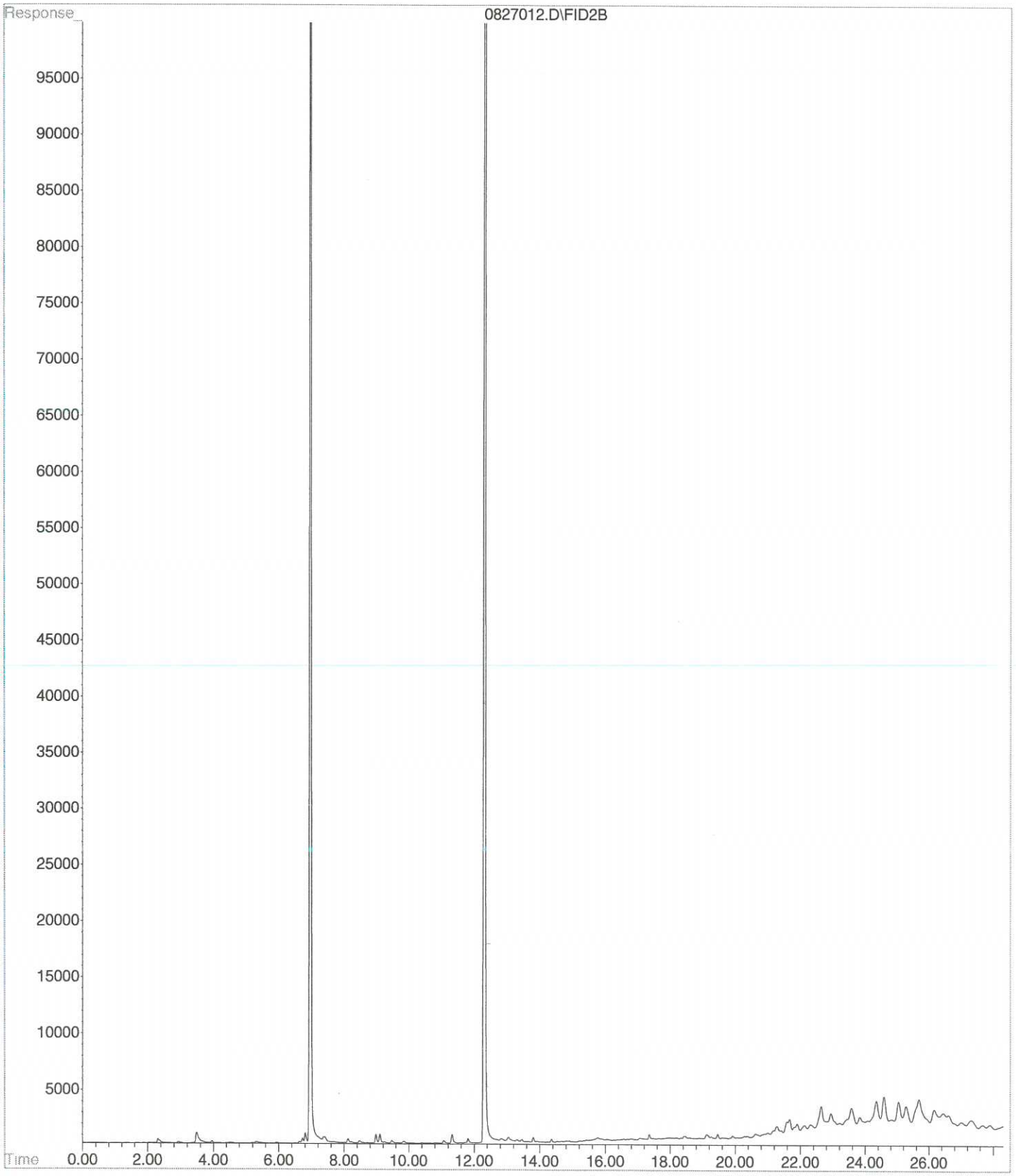
	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	8/27/15	0915	
Received			8/27/15	915	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

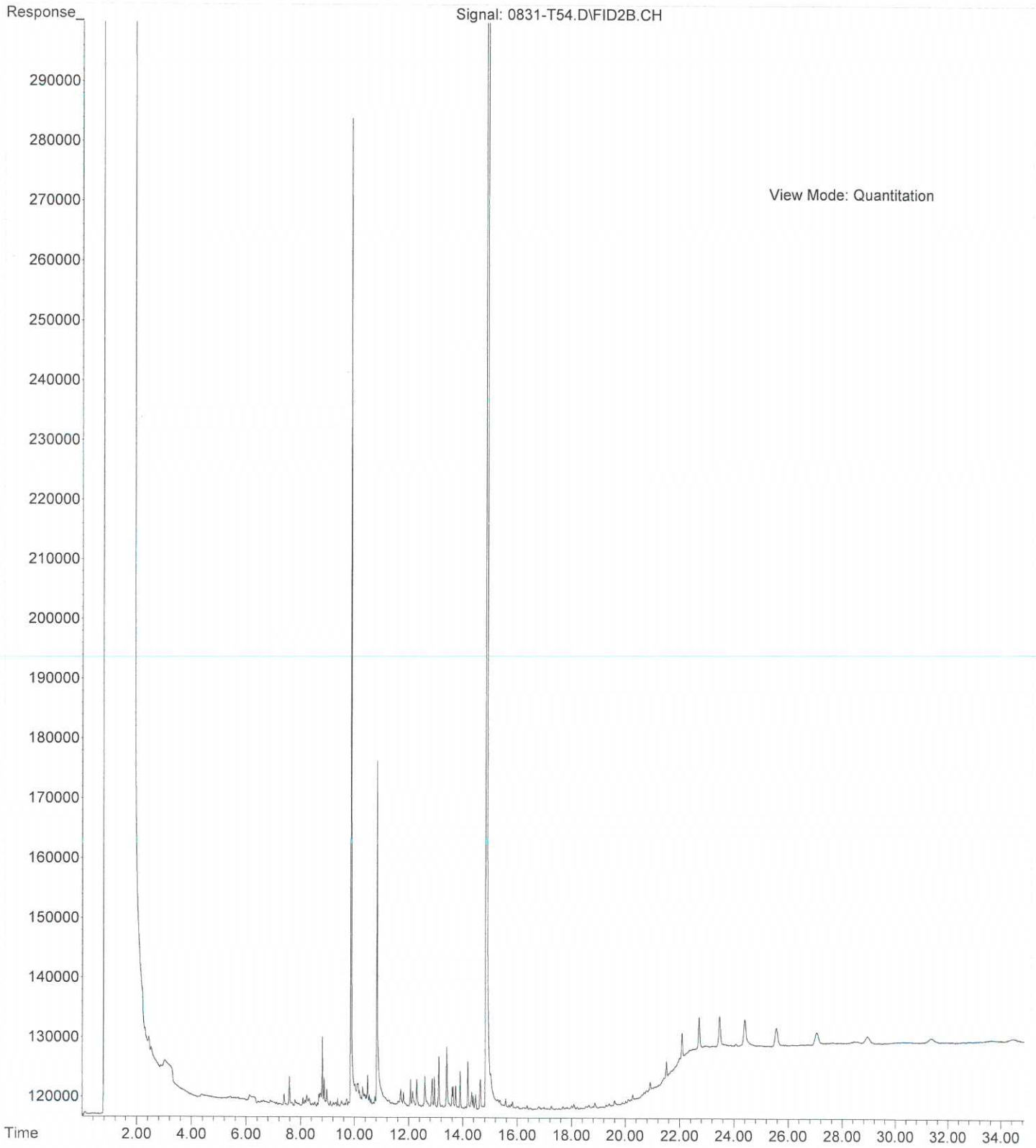
File : X:\BTEX\DARYL\DATA\D150827\0827008.D
Operator :
Acquired : 27 Aug 2015 14:59 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-268-01s
Misc Info : V2-37-21
Vial Number: 8



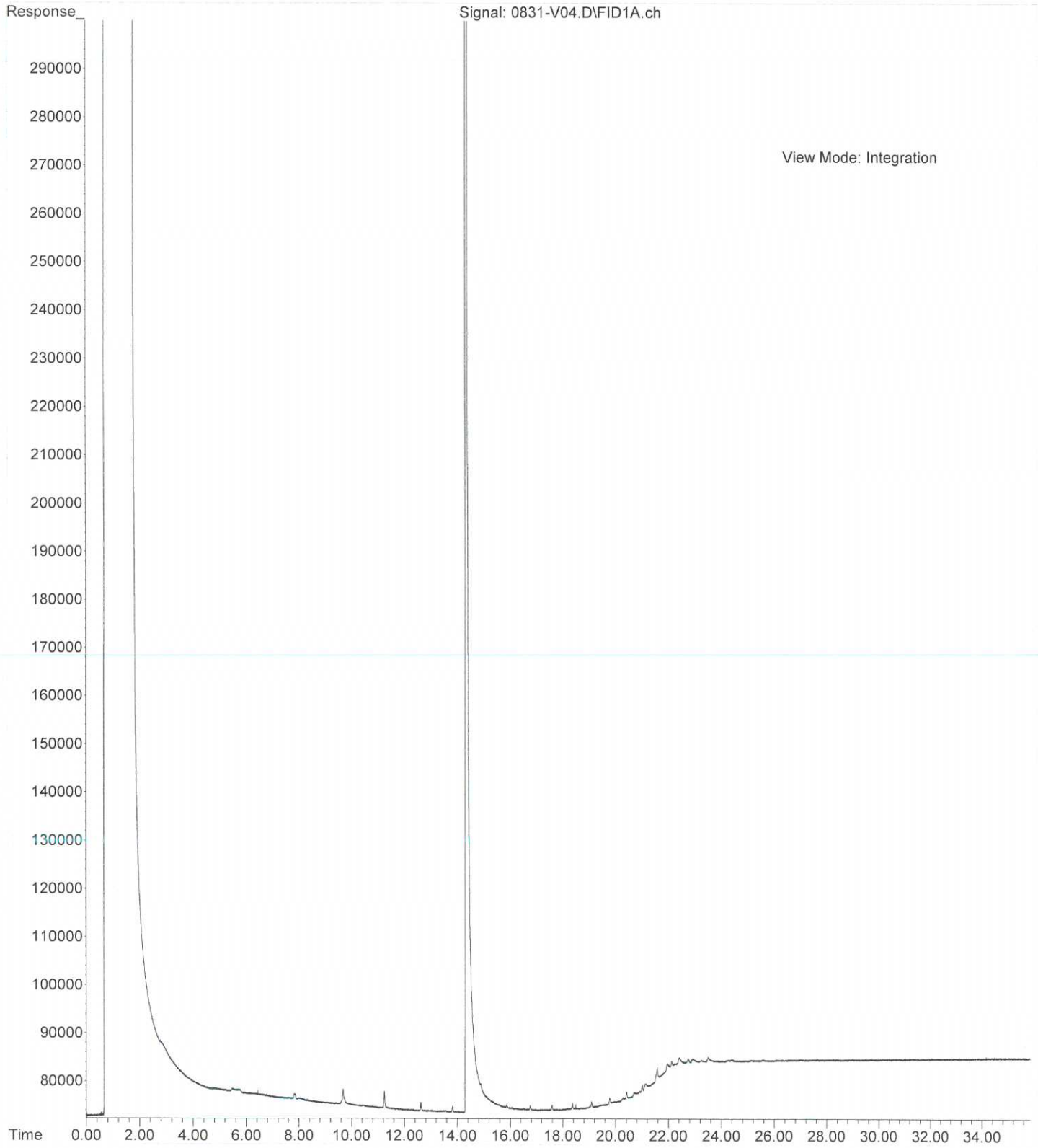
File : X:\BTEX\DARYL\DATA\D150827\0827012.D
Operator :
Acquired : 27 Aug 2015 17:33 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-268-02s
Misc Info : V2-37-21
Vial Number: 12



File :X:\DIESELS\TERI\DATA\T150831.SEC\0831-T54.D
Operator : ZT
Acquired : 31 Aug 2015 11:33 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-268-01
Misc Info :
Vial Number: 54



File :X:\DIESELS\VIGO\DATA\V150831\0831-V04.D
Operator :
Acquired : 31 Aug 2015 11:56 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-268-02
Misc Info :
Vial Number: 4



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 21, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-158

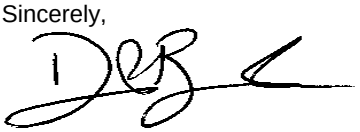
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 17, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

Case Narrative

Samples were collected on August 14, 2015 and received by the laboratory on August 17, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2-B-24.0	08-158-01	Soil	8-14-15	8-17-15	
UST2-S-22.0	08-158-02	Soil	8-14-15	8-17-15	
UST2-W-22.0	08-158-03	Soil	8-14-15	8-17-15	

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2-B-24.0**					
Laboratory ID:	08-158-01					
Diesel Range Organics	**2900**	620	NWTPH-Dx	8-17-15	8-19-15	M,N
Lube Oil	**40000**	1200	NWTPH-Dx	8-17-15	8-19-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**UST2-S-22.0**					
Laboratory ID:	08-158-02					
Diesel Range Organics	**2500**	620	NWTPH-Dx	8-17-15	8-19-15	M,N
Lube Oil	**30000**	1200	NWTPH-Dx	8-17-15	8-19-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S
Client ID:	**UST2-W-22.0**					
Laboratory ID:	08-158-03					
Diesel Range Organics	**4300**	340	NWTPH-Dx	8-17-15	8-18-15	M,N
Lube Oil	**29000**	690	NWTPH-Dx	8-17-15	8-18-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	---	*50-150*				S

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2-B-24.0**					
Laboratory ID:	08-158-01					
Naphthalene	**6.7**	0.83	EPA 8270D/SIM	8-18-15	8-20-15	
2-Methylnaphthalene	**20**	0.83	EPA 8270D/SIM	8-18-15	8-20-15	
1-Methylnaphthalene	**12**	0.83	EPA 8270D/SIM	8-18-15	8-20-15	
Acenaphthylene	**0.32**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Acenaphthene	**0.71**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Fluorene	**1.2**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Phenanthrene	**2.7**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Anthracene	**0.91**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Fluoranthene	**0.79**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Pyrene	**1.8**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[a]anthracene	**0.51**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Chrysene	**0.87**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[b]fluoranthene	**0.40**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo(j,k)fluoranthene	**0.072**	0.033	EPA 8270D/SIM	8-18-15	8-19-15	
Benzo[a]pyrene	**0.40**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Indeno(1,2,3-c,d)pyrene	**0.24**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Dibenz[a,h]anthracene	**0.036**	0.033	EPA 8270D/SIM	8-18-15	8-19-15	
Benzo[g,h,i]perylene	**0.72**	0.17	EPA 8270D/SIM	8-18-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*42*	*32 - 114*				
Pyrene-d10	*69*	*33 - 121*				
Terphenyl-d14	*56*	*31 - 116*				

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2-S-22.0**					
Laboratory ID:	08-158-02					
Naphthalene	**6.7**	0.82	EPA 8270D/SIM	8-18-15	8-20-15	
2-Methylnaphthalene	**12**	0.82	EPA 8270D/SIM	8-18-15	8-20-15	
1-Methylnaphthalene	**6.8**	0.82	EPA 8270D/SIM	8-18-15	8-20-15	
Acenaphthylene	**0.10**	0.033	EPA 8270D/SIM	8-18-15	8-19-15	
Acenaphthene	**0.16**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Fluorene	**0.44**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Phenanthrene	**1.4**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Anthracene	**0.49**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Fluoranthene	**0.68**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Pyrene	**1.3**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[a]anthracene	**0.55**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Chrysene	**0.68**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[b]fluoranthene	**0.34**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo(j,k)fluoranthene	**0.072**	0.033	EPA 8270D/SIM	8-18-15	8-19-15	
Benzo[a]pyrene	**0.36**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Indeno(1,2,3-c,d)pyrene	**0.25**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Dibenz[a,h]anthracene	**ND**	0.033	EPA 8270D/SIM	8-18-15	8-19-15	
Benzo[g,h,i]perylene	**0.64**	0.16	EPA 8270D/SIM	8-18-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*56*	*32 - 114*				
Pyrene-d10	*79*	*33 - 121*				
Terphenyl-d14	*77*	*31 - 116*				

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2-W-22.0**					
Laboratory ID:	08-158-03					
Naphthalene	**5.5**	0.46	EPA 8270D/SIM	8-18-15	8-20-15	
2-Methylnaphthalene	**8.9**	0.46	EPA 8270D/SIM	8-18-15	8-20-15	
1-Methylnaphthalene	**5.2**	0.46	EPA 8270D/SIM	8-18-15	8-20-15	
Acenaphthylene	**0.12**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Acenaphthene	**0.14**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Fluorene	**0.41**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Phenanthrene	**1.2**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Anthracene	**0.48**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Fluoranthene	**0.86**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Pyrene	**1.4**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[a]anthracene	**0.59**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Chrysene	**0.74**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[b]fluoranthene	**0.67**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo(j,k)fluoranthene	**0.20**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Benzo[a]pyrene	**0.44**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Indeno(1,2,3-c,d)pyrene	**0.37**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Dibenz[a,h]anthracene	**0.041**	0.037	EPA 8270D/SIM	8-18-15	8-19-15	
Benzo[g,h,i]perylene	**0.83**	0.092	EPA 8270D/SIM	8-18-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*51*	*32 - 114*				
Pyrene-d10	*63*	*33 - 121*				
Terphenyl-d14	*60*	*31 - 116*				

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0817S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-17-15	8-18-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-17-15	8-18-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*105*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-145-07									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	U1,
Lube Oil	**5440**	**4100**	NA	NA		NA	NA	28	NA	
Surrogate:										
o-Terphenyl						--- ---	*50-150*			S,S

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0818S1					
Naphthalene	**ND**	0.033	EPA 8270D/SIM	8-18-15	8-18-15	
2-Methylnaphthalene	**ND**	0.033	EPA 8270D/SIM	8-18-15	8-18-15	
1-Methylnaphthalene	**ND**	0.033	EPA 8270D/SIM	8-18-15	8-18-15	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-18-15	8-18-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*70*	*32 - 114*				
Pyrene-d10	*72*	*33 - 121*				
Terphenyl-d14	*90*	*31 - 116*				

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0818S1									
	SB	SBD	SB	SBD	SB	SBD				
Acenaphthylene	**0.0754**	**0.0732**	0.0833	0.0833	91	88	61 - 125	3	16	
Acenaphthene	**0.0752**	**0.0719**	0.0833	0.0833	90	86	66 - 113	4	16	
Fluorene	**0.0787**	**0.0725**	0.0833	0.0833	94	87	60 - 117	8	16	
Phenanthrene	**0.0746**	**0.0741**	0.0833	0.0833	90	89	63 - 116	1	12	
Anthracene	**0.114**	**0.113**	0.0833	0.0833	137	136	66 - 146	1	19	
Fluoranthene	**0.0921**	**0.0828**	0.0833	0.0833	111	99	60 - 125	11	13	
Pyrene	**0.0802**	**0.0784**	0.0833	0.0833	96	94	66 - 126	2	15	
Benzo[a]anthracene	**0.0726**	**0.0774**	0.0833	0.0833	87	93	60 - 128	6	15	
Chrysene	**0.0709**	**0.0735**	0.0833	0.0833	85	88	60 - 117	4	13	
Benzo[b]fluoranthene	**0.0766**	**0.0748**	0.0833	0.0833	92	90	60 - 131	2	16	
Benzo(j,k)fluoranthene	**0.0786**	**0.0765**	0.0833	0.0833	94	92	57 - 126	3	20	
Benzo[a]pyrene	**0.0796**	**0.0795**	0.0833	0.0833	96	95	62 - 136	0	16	
Indeno(1,2,3-c,d)pyrene	**0.0824**	**0.0878**	0.0833	0.0833	99	105	60 - 127	6	19	
Dibenz[a,h]anthracene	**0.0753**	**0.0765**	0.0833	0.0833	90	92	62 - 133	2	22	
Benzo[g,h,i]perylene	**0.0769**	**0.0828**	0.0833	0.0833	92	99	63 - 129	7	22	
Surrogate:										
2-Fluorobiphenyl					*97*	*93*	*32 - 114*			
Pyrene-d10					*97*	*94*	*33 - 121*			
Terphenyl-d14					*97*	*111*	*31 - 116*			

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Date of Report: August 21, 2015
Samples Submitted: August 17, 2015
Laboratory Reference: 1508-158
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-17-15

Client ID	Lab ID	% Moisture
UST2-B-24.0	08-158-01	19
UST2-S-22.0	08-158-02	19
UST2-W-22.0	08-158-03	27

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 08-158

Company: GeoEngineers
Project Number: 21138-001-03
Project Name: 9th & Lenora Project
Project Manager: Fasih Khan
Sampled by: Fasih Khan

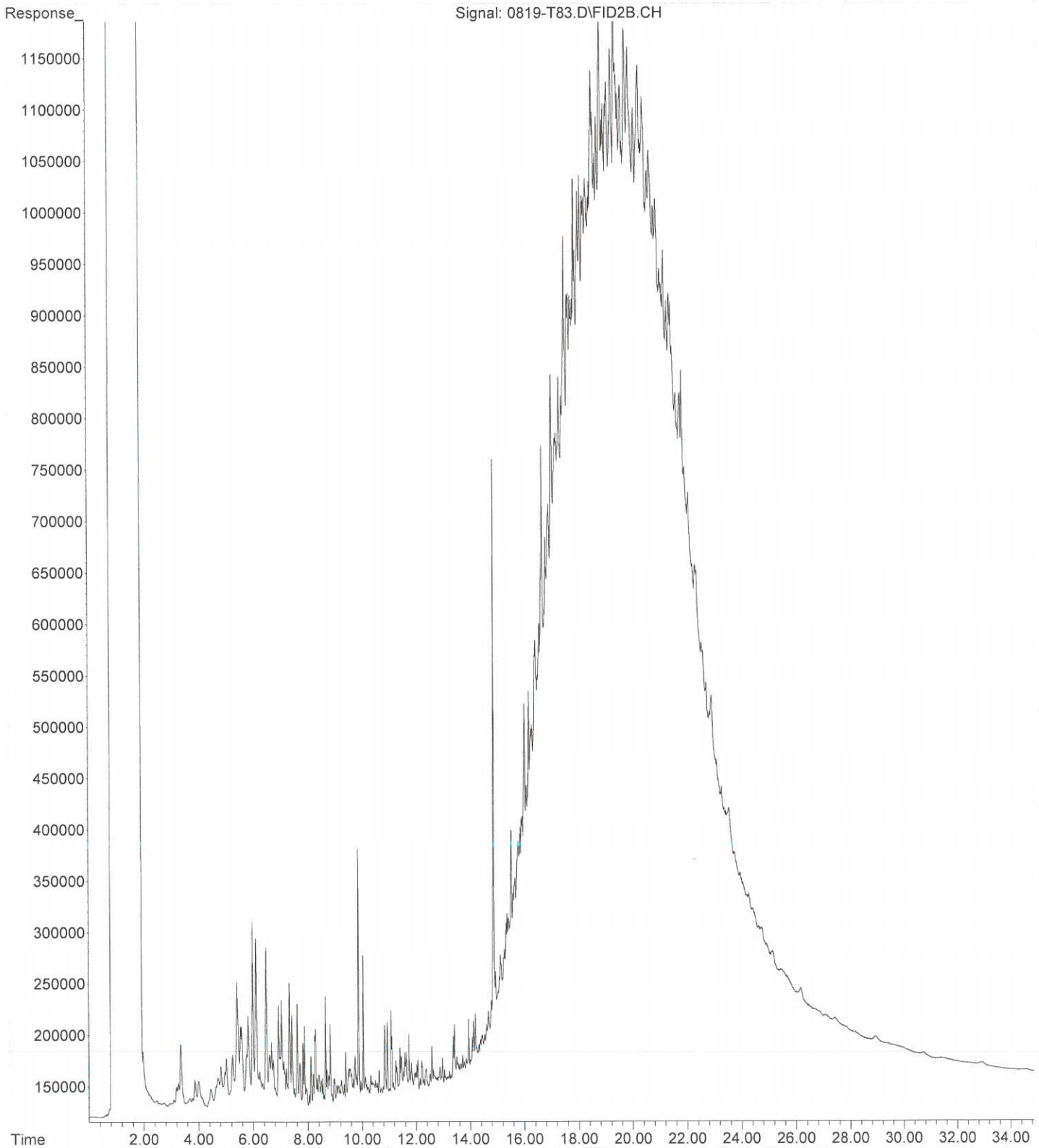
Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☒ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	UST2-B-24.0	8/14/15	1245	S	1				X				X														X
2	UST2-S-22.0	↓	1300	↓	↓				X				X														X
3	UST2-W-22.0	↓	1310	↓	↓				X				X														X

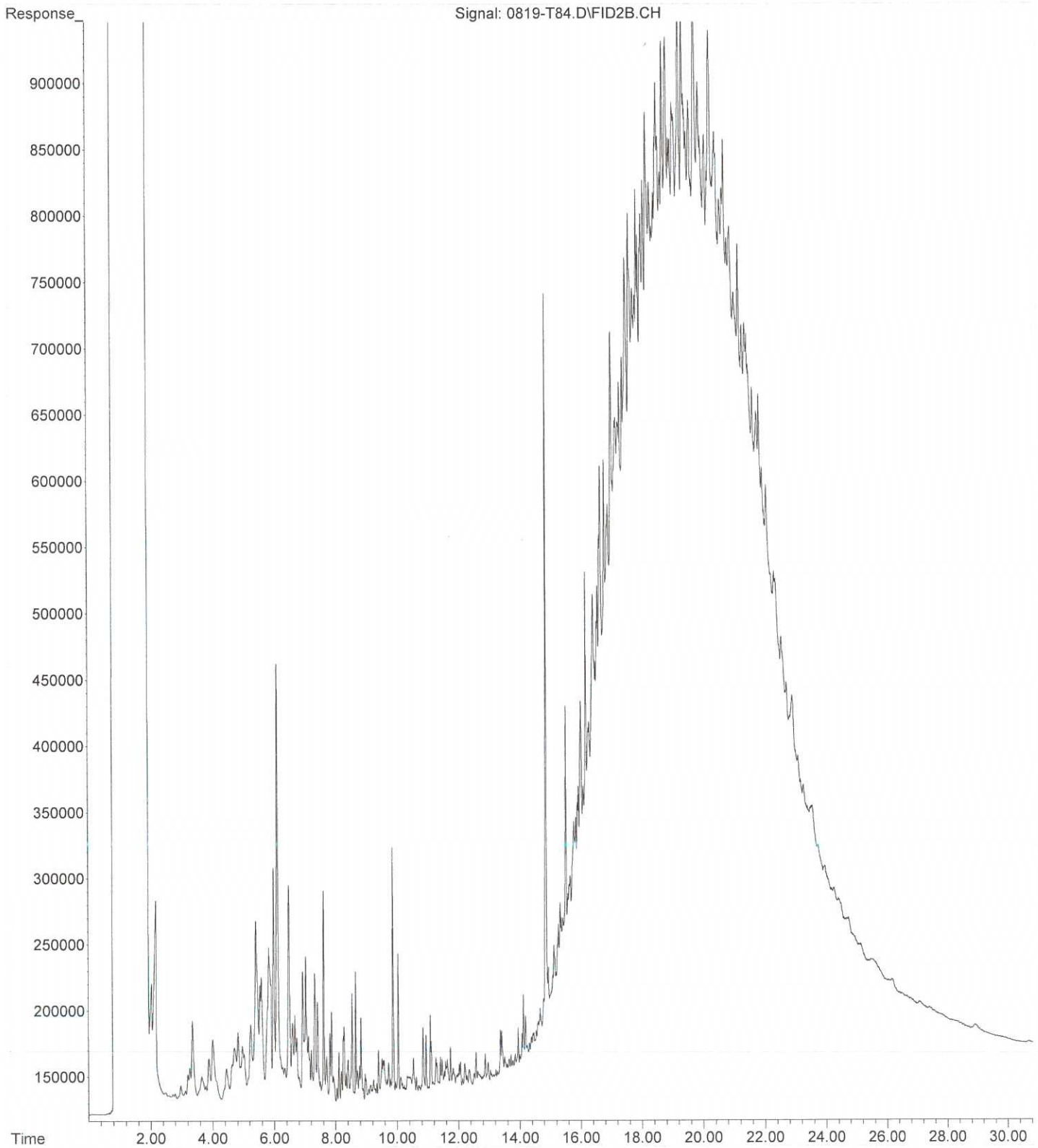
	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	8/17/15	0825	
Received	Kalson	OSE	8.17.15	8:25A	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

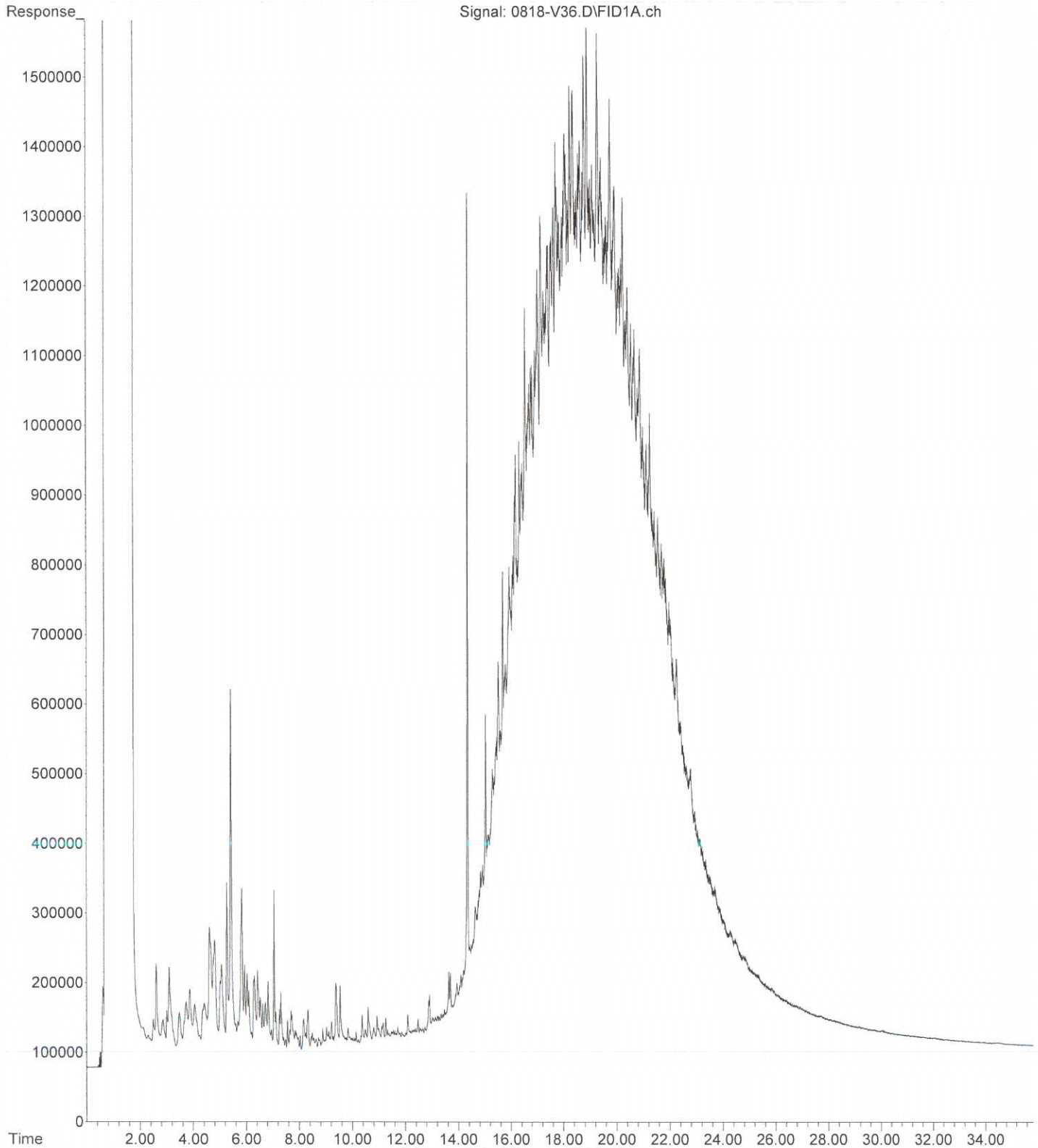
File : X:\DIESELS\TERI\DATA\T150819.SEC\0819-T83.D
Operator : ZT
Acquired : 20 Aug 2015 10:45 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-158-01 20X
Misc Info :
Vial Number: 83



File :X:\DIESELS\TERI\DATA\T150819.SEC\0819-T84.D
Operator : ZT
Acquired : 20 Aug 2015 11:28 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-158-02 20X
Misc Info :
Vial Number: 84



File :X:\DIESELS\VIGO\DATA\V150818\0818-V36.D
Operator :
Acquired : 19 Aug 2015 14:39 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-158-03 10X
Misc Info :
Vial Number: 36



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 12, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-101

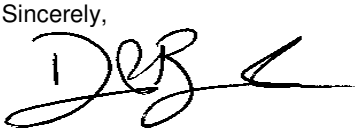
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 12, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 12, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-101
Project: 21138-001-03

Case Narrative

Samples were collected on August 11, 2015 and received by the laboratory on August 12, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 12, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-101
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SW-UST-PRODUCT	08-101-01	Product	8-11-15	8-12-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 12, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-101
Project: 21138-001-03

NWTPH-HCID

Matrix: Product
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**SW-UST-PRODUCT**					
Laboratory ID:	08-101-01					
Gasoline Range Organics	**ND**	8600	NWTPH-HCID	8-12-15	8-12-15	U1
Diesel Fuel #2	**Detected**	2400	NWTPH-HCID	8-12-15	8-12-15	
Lube Oil	**Detected**	4800	NWTPH-HCID	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*106*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 12, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-101
Project: 21138-001-03

NWTPH-HCID
QUALITY CONTROL

Matrix: Product
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0812P1					
Gasoline Range Organics	**ND**	1000	NWTPH-HCID	8-12-15	8-12-15	
Diesel Range Organics	**ND**	2500	NWTPH-HCID	8-12-15	8-12-15	
Lube Oil Range Organics	**ND**	5000	NWTPH-HCID	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

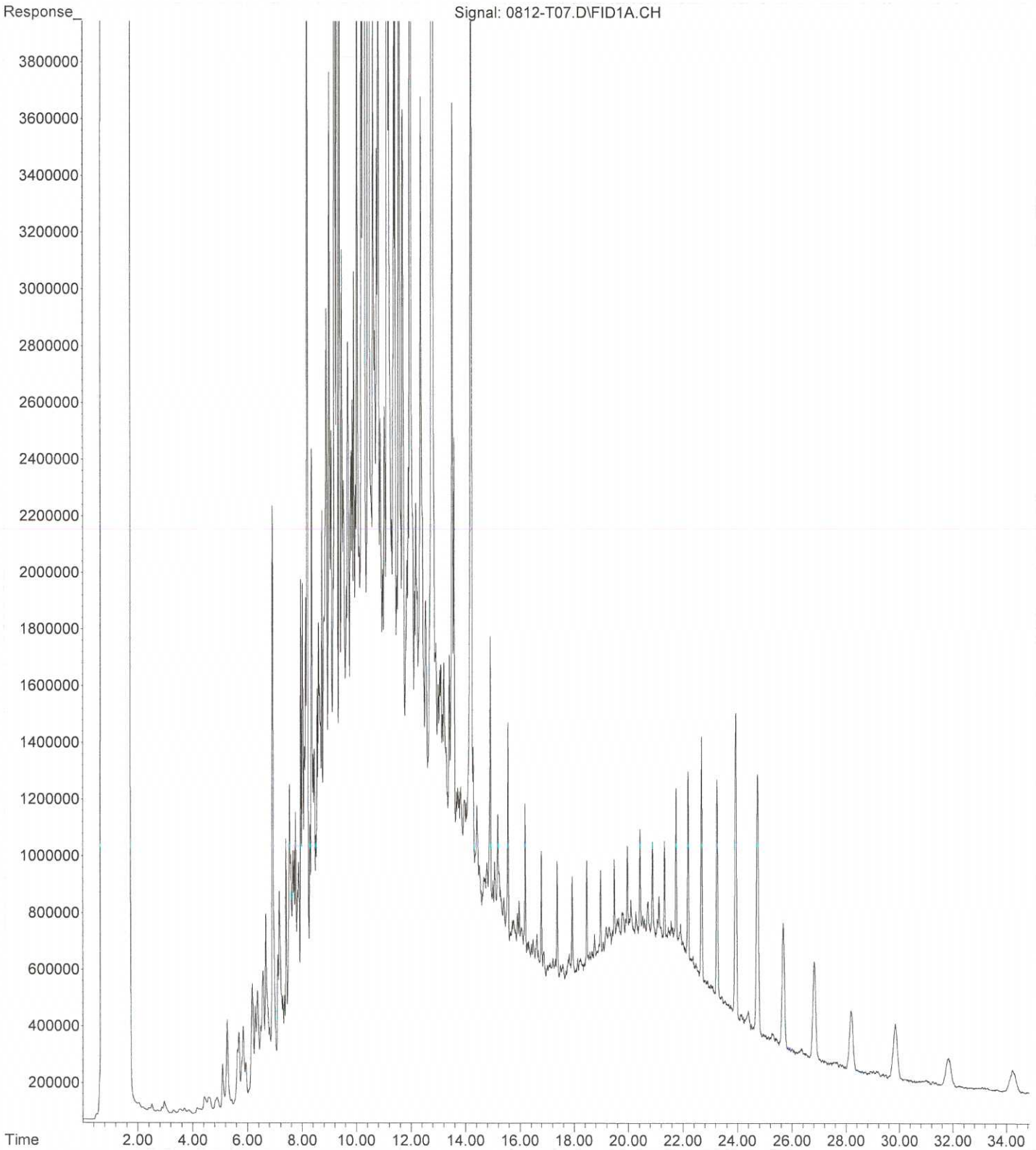
Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

File :X:\DIESELS\TERI\DATA\T150812\0812-T07.D
Operator : ZT
Acquired : 12 Aug 2015 15:35 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-101-01 HC P
Misc Info :
Vial Number: 7



Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☒ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-101

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	SW-UST-PRODUCT	8/11/15	0930	PRODUCT	1	X																					

	Signature	Company	Date	Time
Relinquished		GEO	8/12/15	0925
Received		GEO	8/12/15	0925
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 11, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-031

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 6, 2015.

Please note that this is a *revised* report, and replaces the original due to a revision of the sample identification.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

Case Narrative

Samples were collected on August 4, 2015 and received by the laboratory on August 6, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2EX-S1-20.0	08-031-01	Soil	8-4-15	8-6-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S1-20.0**					
Laboratory ID:	08-031-01					
Benzene	**ND**	0.020	EPA 8021B	8-7-15	8-7-15	
Toluene	**ND**	0.055	EPA 8021B	8-7-15	8-7-15	
Ethyl Benzene	**ND**	0.055	EPA 8021B	8-7-15	8-7-15	
m,p-Xylene	**ND**	0.055	EPA 8021B	8-7-15	8-7-15	
o-Xylene	**ND**	0.055	EPA 8021B	8-7-15	8-7-15	
Gasoline	**ND**	5.5	NWTPH-Gx	8-7-15	8-7-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*91*	*68-123*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S1-20.0**					
Laboratory ID:	08-031-01					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-6-15	8-6-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0807S1					
Benzene	**ND**	0.020	EPA 8021B	8-7-15	8-7-15	
Toluene	**ND**	0.050	EPA 8021B	8-7-15	8-7-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-7-15	8-7-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-7-15	8-7-15	
o-Xylene	**ND**	0.050	EPA 8021B	8-7-15	8-7-15	
Gasoline	**ND**	5.0	NWTPH-Gx	8-7-15	8-7-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-047-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*89*	*89*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0807S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**1.03**	**1.03**	1.00	1.00		**103**	**103**	75-117	0	13	
Toluene	**1.02**	**1.02**	1.00	1.00		**102**	**102**	78-118	0	12	
Ethyl Benzene	**1.01**	**1.01**	1.00	1.00		**101**	**101**	78-118	0	12	
m,p-Xylene	**1.02**	**1.02**	1.00	1.00		**102**	**102**	78-121	0	13	
o-Xylene	**1.02**	**1.01**	1.00	1.00		**102**	**101**	77-119	1	13	
Surrogate:											
Fluorobenzene						*96*	*95*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0806S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-6-15	8-6-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-6-15	8-6-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-031-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*93* *95*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 11, 2015
Samples Submitted: August 6, 2015
Laboratory Reference: 1508-031
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-6-15

Client ID	Lab ID	% Moisture
UST2EX-S1-20.0	08-031-01	12

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-031

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	~~EX SW-1 20.0~~ VST2EX-S1-20.0	8/4/15	1400	S	2		X		X													X

	Signature	Company	Date	Time
Relinquished		GE	8/6/15	0745
Received		GE	8-6-15	7:45A
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

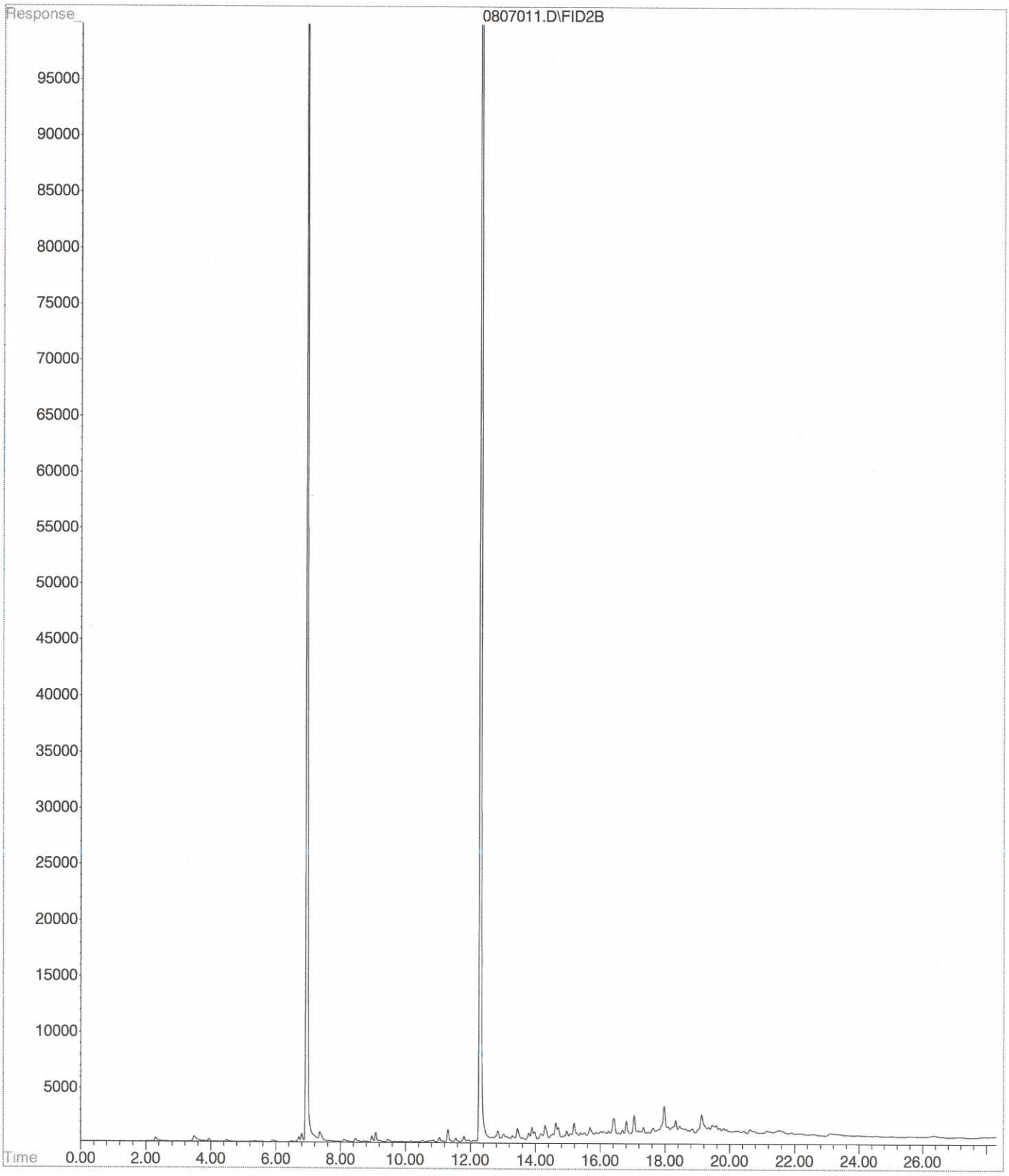
Reviewed/Date

Reviewed/Date

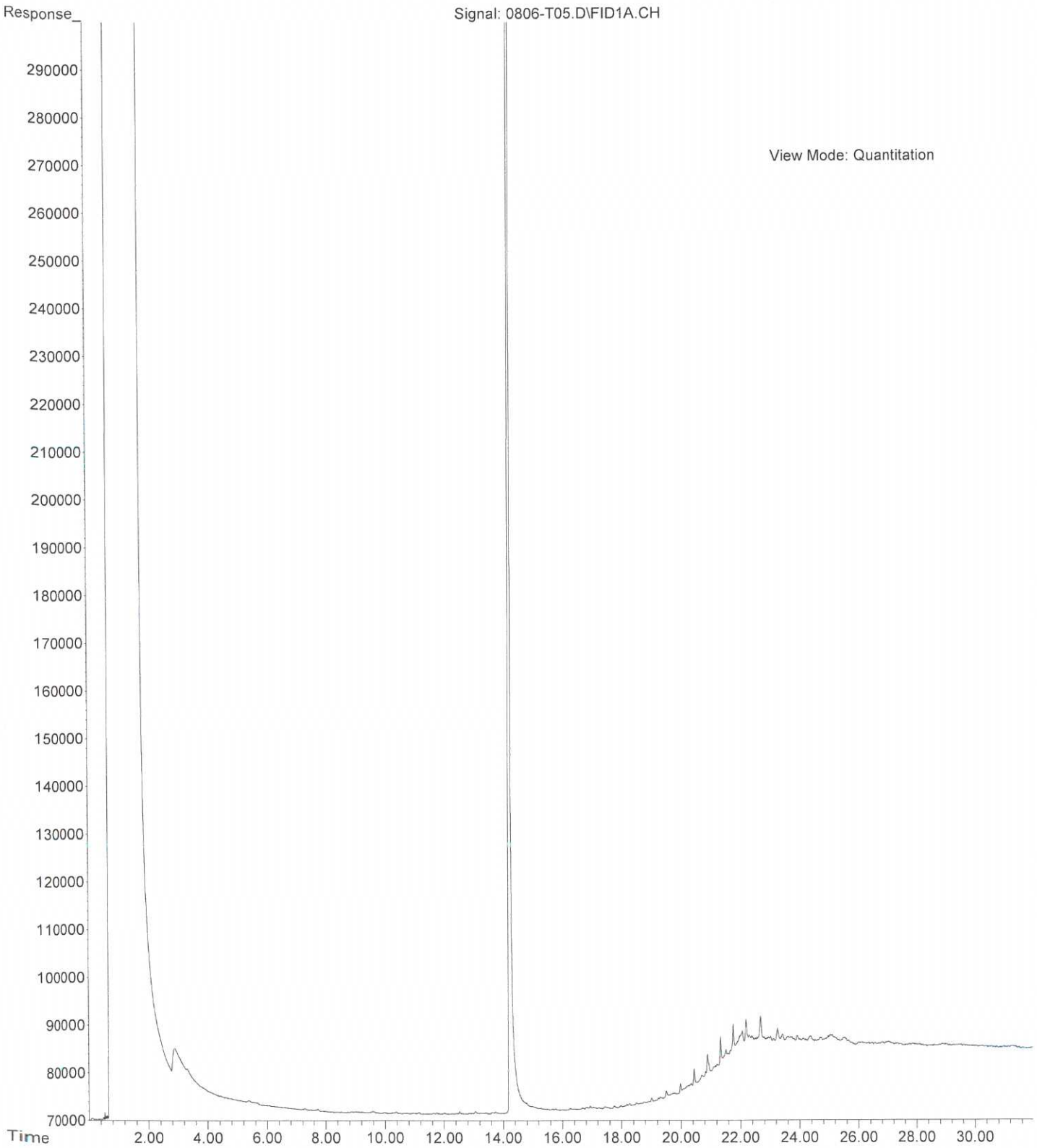
Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

File : X:\BTEX\DARYL\DATA\D150807\0807011.D
Operator :
Acquired : 7 Aug 2015 18:19 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-031-01s
Misc Info : V2-37-21
Vial Number: 11



File :X:\DIESELS\TERI\DATA\T150806\0806-T05.D
Operator : ZT
Acquired : 06 Aug 2015 14:33 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-031-01
Misc Info :
Vial Number: 5



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 2, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-289R2

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2015.

Please note that this is a *revised* report, and replaces the original due to a revision of the sample identification.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

Case Narrative

Samples were collected on August 27 and 28, 2015 and received by the laboratory on August 28, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

PAHs EPA 8270D/SIM Analysis

The Spike Blank/Spike Blank Duplicate had one recovery slightly above control limits, due to a small upward bias in the instruments' calibration. No further action was taken.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2EX-W2-30.0	08-289-01	Soil	8-28-15	8-28-15	
UST2EX-S2-24.0	08-289-02	Soil	8-27-15	8-28-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W2-30.0**					
Laboratory ID:	08-289-01					
Diesel Range Organics	**240**	34	NWTPH-Dx	8-31-15	8-31-15	
Lube Oil	**1800**	68	NWTPH-Dx	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**UST2EX-S2-24.0**					
Laboratory ID:	08-289-02					
Diesel Range Organics	**56**	34	NWTPH-Dx	8-31-15	8-31-15	
Lube Oil	**490**	68	NWTPH-Dx	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*76*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W2-30.0**					
Laboratory ID:	08-289-01					
Naphthalene	**0.18**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**0.89**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**0.65**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**0.024**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**0.053**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**0.088**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**0.17**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**0.051**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**0.044**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**0.12**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**0.043**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**0.047**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**0.018**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**0.015**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**0.027**	0.0091	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*65*	*32 - 114*				
Pyrene-d10	*77*	*33 - 121*				
Terphenyl-d14	*67*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S2-24.0**					
Laboratory ID:	08-289-02					
Naphthalene	**0.20**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**0.32**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**0.21**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**0.013**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**0.024**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**0.051**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**0.018**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**0.016**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**0.036**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**0.015**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**0.015**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**0.011**	0.0090	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*48*	*32 - 114*				
Pyrene-d10	*45*	*33 - 121*				
Terphenyl-d14	*56*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0831S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-31-15	8-31-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*110*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-287-04,09 Comp.										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*107*	*112*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0831S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*32 - 114*				
Pyrene-d10	*83*	*33 - 121*				
Terphenyl-d14	*90*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0831S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0711**	**0.0719**	0.0833	0.0833	85	86	63 - 113	1	19	
Acenaphthylene	**0.0748**	**0.0728**	0.0833	0.0833	90	87	61 - 125	3	16	
Acenaphthene	**0.0748**	**0.0732**	0.0833	0.0833	90	88	66 - 113	2	16	
Fluorene	**0.0753**	**0.0777**	0.0833	0.0833	90	93	60 - 117	3	16	
Phenanthrene	**0.0726**	**0.0724**	0.0833	0.0833	87	87	63 - 116	0	12	
Anthracene	**0.127**	**0.126**	0.0833	0.0833	152	151	66 - 146	1	19	II
Fluoranthene	**0.0717**	**0.0722**	0.0833	0.0833	86	87	60 - 125	1	13	
Pyrene	**0.0716**	**0.0716**	0.0833	0.0833	86	86	66 - 126	0	15	
Benzo[a]anthracene	**0.0826**	**0.0824**	0.0833	0.0833	99	99	60 - 128	0	15	
Chrysene	**0.0740**	**0.0746**	0.0833	0.0833	89	90	60 - 117	1	13	
Benzo[b]fluoranthene	**0.0711**	**0.0720**	0.0833	0.0833	85	86	60 - 131	1	16	
Benzo(j,k)fluoranthene	**0.0727**	**0.0735**	0.0833	0.0833	87	88	57 - 126	1	20	
Benzo[a]pyrene	**0.0699**	**0.0704**	0.0833	0.0833	84	85	62 - 136	1	16	
Indeno(1,2,3-c,d)pyrene	**0.0603**	**0.0632**	0.0833	0.0833	72	76	60 - 127	5	19	
Dibenz[a,h]anthracene	**0.0592**	**0.0627**	0.0833	0.0833	71	75	62 - 133	6	22	
Benzo[g,h,i]perylene	**0.0641**	**0.0668**	0.0833	0.0833	77	80	63 - 129	4	22	
Surrogate:										
2-Fluorobiphenyl					*88*	*87*	*32 - 114*			
Pyrene-d10					*82*	*83*	*33 - 121*			
Terphenyl-d14					*89*	*89*	*31 - 116*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 2, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-289R2
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-31-15

Client ID	Lab ID	% Moisture
UST2EX-W2-30.0	08-289-01	27
UST2EX-S2-24.0	08-289-02	26

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☒ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-289

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	VST2EX-~~LOT~~ W2 -30.0 * DB 12/29/15	8/28/15	1320	S	2				(X)				(X)														X
2	VST2EX-S2-24.0	8/27/15	1240	S	2				(X)				(X)														X

	Signature	Company	Date	Time
Relinquished		GEI	8/28/15	1555
Received		Onsite	8-28-15	1555
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
* HOT Sample

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐

OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 1, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-288

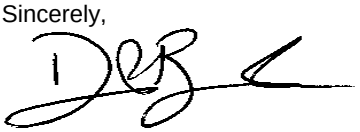
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 28, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

Case Narrative

Samples were collected on August 28, 2015 and received by the laboratory on August 28, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

PAHs EPA 8270D/SIM Analysis

The Spike Blank/Spike Blank Duplicate had one recovery slightly above control limits, due to a small upward bias in the instruments' calibration. No further action was taken.

Please note that any other QA/QC issues associated with these extractions and analyses will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST2EX-S1-33.0	08-288-01	Soil	8-28-15	8-28-15	
UST2EX-S2-33.0	08-288-02	Soil	8-28-15	8-28-15	
UST2EX-W1-33.0	08-288-03	Soil	8-28-15	8-28-15	
UST2EX-W2-33.0	08-288-04	Soil	8-28-15	8-28-15	
UST2EX-B2-36.0	08-288-05	Soil	8-28-15	8-28-15	

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S1-33.0**					
Laboratory ID:	08-288-01					
Benzene	**ND**	0.020	EPA 8021B	8-28-15	8-28-15	
Toluene	**ND**	0.060	EPA 8021B	8-28-15	8-28-15	
Ethyl Benzene	**ND**	0.060	EPA 8021B	8-28-15	8-28-15	
m,p-Xylene	**ND**	0.060	EPA 8021B	8-28-15	8-28-15	
o-Xylene	**ND**	0.060	EPA 8021B	8-28-15	8-28-15	
Gasoline	**ND**	6.0	NWTPH-Gx	8-28-15	8-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*89*	*68-123*				
Client ID:	**UST2EX-S2-33.0**					
Laboratory ID:	08-288-02					
Benzene	**ND**	0.020	EPA 8021B	8-28-15	8-28-15	
Toluene	**ND**	0.069	EPA 8021B	8-28-15	8-28-15	
Ethyl Benzene	**ND**	0.069	EPA 8021B	8-28-15	8-28-15	
m,p-Xylene	**ND**	0.069	EPA 8021B	8-28-15	8-28-15	
o-Xylene	**ND**	0.069	EPA 8021B	8-28-15	8-28-15	
Gasoline	**ND**	6.9	NWTPH-Gx	8-28-15	8-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*68-123*				
Client ID:	**UST2EX-W1-33.0**					
Laboratory ID:	08-288-03					
Benzene	**ND**	0.020	EPA 8021B	8-28-15	8-28-15	
Toluene	**ND**	0.079	EPA 8021B	8-28-15	8-28-15	
Ethyl Benzene	**ND**	0.079	EPA 8021B	8-28-15	8-28-15	
m,p-Xylene	**ND**	0.079	EPA 8021B	8-28-15	8-28-15	
o-Xylene	**ND**	0.079	EPA 8021B	8-28-15	8-28-15	
Gasoline	**ND**	7.9	NWTPH-Gx	8-28-15	8-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*68-123*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W2-33.0**					
Laboratory ID:	08-288-04					
Benzene	**ND**	0.020	EPA 8021B	8-28-15	8-28-15	
Toluene	**ND**	0.067	EPA 8021B	8-28-15	8-28-15	
Ethyl Benzene	**ND**	0.067	EPA 8021B	8-28-15	8-28-15	
m,p-Xylene	**ND**	0.067	EPA 8021B	8-28-15	8-28-15	
o-Xylene	**ND**	0.067	EPA 8021B	8-28-15	8-28-15	
Gasoline	**ND**	6.7	NWTPH-Gx	8-28-15	8-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*87*	*68-123*				
Client ID:	**UST2EX-B2-36.0**					
Laboratory ID:	08-288-05					
Benzene	**ND**	0.020	EPA 8021B	8-28-15	8-28-15	
Toluene	**ND**	0.073	EPA 8021B	8-28-15	8-28-15	
Ethyl Benzene	**ND**	0.073	EPA 8021B	8-28-15	8-28-15	
m,p-Xylene	**ND**	0.073	EPA 8021B	8-28-15	8-28-15	
o-Xylene	**ND**	0.073	EPA 8021B	8-28-15	8-28-15	
Gasoline	**ND**	7.3	NWTPH-Gx	8-28-15	8-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*90*	*68-123*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S1-33.0**					
Laboratory ID:	08-288-01					
Diesel Range Organics	**ND**	27	NWTPH-Dx	8-29-15	8-31-15	
Lube Oil Range Organics	**ND**	55	NWTPH-Dx	8-29-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				
Client ID:	**UST2EX-S2-33.0**					
Laboratory ID:	08-288-02					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-29-15	8-31-15	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	8-29-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*103*	*50-150*				
Client ID:	**UST2EX-W1-33.0**					
Laboratory ID:	08-288-03					
Diesel Range Organics	**ND**	33	NWTPH-Dx	8-29-15	8-31-15	
Lube Oil Range Organics	**ND**	65	NWTPH-Dx	8-29-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				
Client ID:	**UST2EX-W2-33.0**					
Laboratory ID:	08-288-04					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-29-15	8-31-15	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	8-29-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**UST2EX-B2-36.0**					
Laboratory ID:	08-288-05					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-29-15	8-31-15	
Lube Oil Range Organics	**ND**	64	NWTPH-Dx	8-29-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S1-33.0**					
Laboratory ID:	08-288-01					
Naphthalene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0073	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*57*	*32 - 114*				
Pyrene-d10	*56*	*33 - 121*				
Terphenyl-d14	*61*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-S2-33.0**					
Laboratory ID:	08-288-02					
Naphthalene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0084	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*52*	*32 - 114*				
Pyrene-d10	*49*	*33 - 121*				
Terphenyl-d14	*53*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W1-33.0**					
Laboratory ID:	08-288-03					
Naphthalene	**0.040**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**0.021**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**0.021**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0087	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*32 - 114*				
Pyrene-d10	*60*	*33 - 121*				
Terphenyl-d14	*65*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-W2-33.0**					
Laboratory ID:	08-288-04					
Naphthalene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0083	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*32 - 114*				
Pyrene-d10	*82*	*33 - 121*				
Terphenyl-d14	*88*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST2EX-B2-36.0**					
Laboratory ID:	08-288-05					
Naphthalene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0085	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*74*	*32 - 114*				
Pyrene-d10	*73*	*33 - 121*				
Terphenyl-d14	*78*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0828S2					
Benzene	**ND**	0.020	EPA 8021B	8-28-15	8-28-15	
Toluene	**ND**	0.050	EPA 8021B	8-28-15	8-28-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	8-28-15	8-28-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	8-28-15	8-28-15	
o-Xylene	**ND**	0.050	EPA 8021B	8-28-15	8-28-15	
Gasoline	**ND**	5.0	NWTPH-Gx	8-28-15	8-28-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-288-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*89*	*88*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0828S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.870**	**0.951**	1.00	1.00		**87**	**95**	75-117	9	13	
Toluene	**0.875**	**0.967**	1.00	1.00		**88**	**97**	78-118	10	12	
Ethyl Benzene	**0.862**	**0.936**	1.00	1.00		**86**	**94**	78-118	8	12	
m,p-Xylene	**0.878**	**0.964**	1.00	1.00		**88**	**96**	78-121	9	13	
o-Xylene	**0.869**	**0.943**	1.00	1.00		**87**	**94**	77-119	8	13	
Surrogate:											
Fluorobenzene						*82*	*87*	*68-123*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0829S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-29-15	8-31-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-29-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-247-04										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*97*	*92*	*50-150*			

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0831S1					
Naphthalene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
2-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
1-Methylnaphthalene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthylene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Acenaphthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Fluorene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Phenanthrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Anthracene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Pyrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Benzo[g,h,i]perylene	**ND**	0.0067	EPA 8270D/SIM	8-31-15	8-31-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*81*	*32 - 114*				
Pyrene-d10	*83*	*33 - 121*				
Terphenyl-d14	*90*	*31 - 116*				

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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

PAHs EPA 8270D/SIM
SB/SBD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
SPIKE BLANKS										
Laboratory ID:	SB0831S1									
	SB	SBD	SB	SBD	SB	SBD				
Naphthalene	**0.0711**	**0.0719**	0.0833	0.0833	85	86	63 - 113	1	19	
Acenaphthylene	**0.0748**	**0.0728**	0.0833	0.0833	90	87	61 - 125	3	16	
Acenaphthene	**0.0748**	**0.0732**	0.0833	0.0833	90	88	66 - 113	2	16	
Fluorene	**0.0753**	**0.0777**	0.0833	0.0833	90	93	60 - 117	3	16	
Phenanthrene	**0.0726**	**0.0724**	0.0833	0.0833	87	87	63 - 116	0	12	
Anthracene	**0.127**	**0.126**	0.0833	0.0833	152	151	66 - 146	1	19	II
Fluoranthene	**0.0717**	**0.0722**	0.0833	0.0833	86	87	60 - 125	1	13	
Pyrene	**0.0716**	**0.0716**	0.0833	0.0833	86	86	66 - 126	0	15	
Benzo[a]anthracene	**0.0826**	**0.0824**	0.0833	0.0833	99	99	60 - 128	0	15	
Chrysene	**0.0740**	**0.0746**	0.0833	0.0833	89	90	60 - 117	1	13	
Benzo[b]fluoranthene	**0.0711**	**0.0720**	0.0833	0.0833	85	86	60 - 131	1	16	
Benzo(j,k)fluoranthene	**0.0727**	**0.0735**	0.0833	0.0833	87	88	57 - 126	1	20	
Benzo[a]pyrene	**0.0699**	**0.0704**	0.0833	0.0833	84	85	62 - 136	1	16	
Indeno(1,2,3-c,d)pyrene	**0.0603**	**0.0632**	0.0833	0.0833	72	76	60 - 127	5	19	
Dibenz[a,h]anthracene	**0.0592**	**0.0627**	0.0833	0.0833	71	75	62 - 133	6	22	
Benzo[g,h,i]perylene	**0.0641**	**0.0668**	0.0833	0.0833	77	80	63 - 129	4	22	
Surrogate:										
2-Fluorobiphenyl					*88*	*87*	*32 - 114*			
Pyrene-d10					*82*	*83*	*33 - 121*			
Terphenyl-d14					*89*	*89*	*31 - 116*			

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: September 1, 2015
Samples Submitted: August 28, 2015
Laboratory Reference: 1508-288
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-28-15

Client ID	Lab ID	% Moisture
UST2EX-S1-33.0	08-288-01	9
UST2EX-S2-33.0	08-288-02	21
UST2EX-W1-33.0	08-288-03	23
UST2EX-W2-33.0	08-288-04	19
UST2EX-B2-36.0	08-288-05	22

This report pertains to the samples analyzed in accordance with the chain of custody,
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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One)

- [x] Same Day (By 10 AM) (GBEx, Dx)
- [x] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 08-288

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	UST2EX-S1-33.0	8/28/15	1242	S	2		X		X				X									X
2	UST2EX-S2-33.0	↓	1251	↓	↓		X		X				X									X
3	UST2EX-W1-33.0		1010				X		X				X									X
4	UST2EX-W2-33.0		1015				X		X				X									X
5 ★	UST2EX-B2-36.0		1310				X		X				X									X

	Signature	Company	Date	Time
Relinquished		GEI	8/28/15	1545
Received		Onsite	8-28-15	1545
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

PAH 2 day, except #5 (1 day TAT)

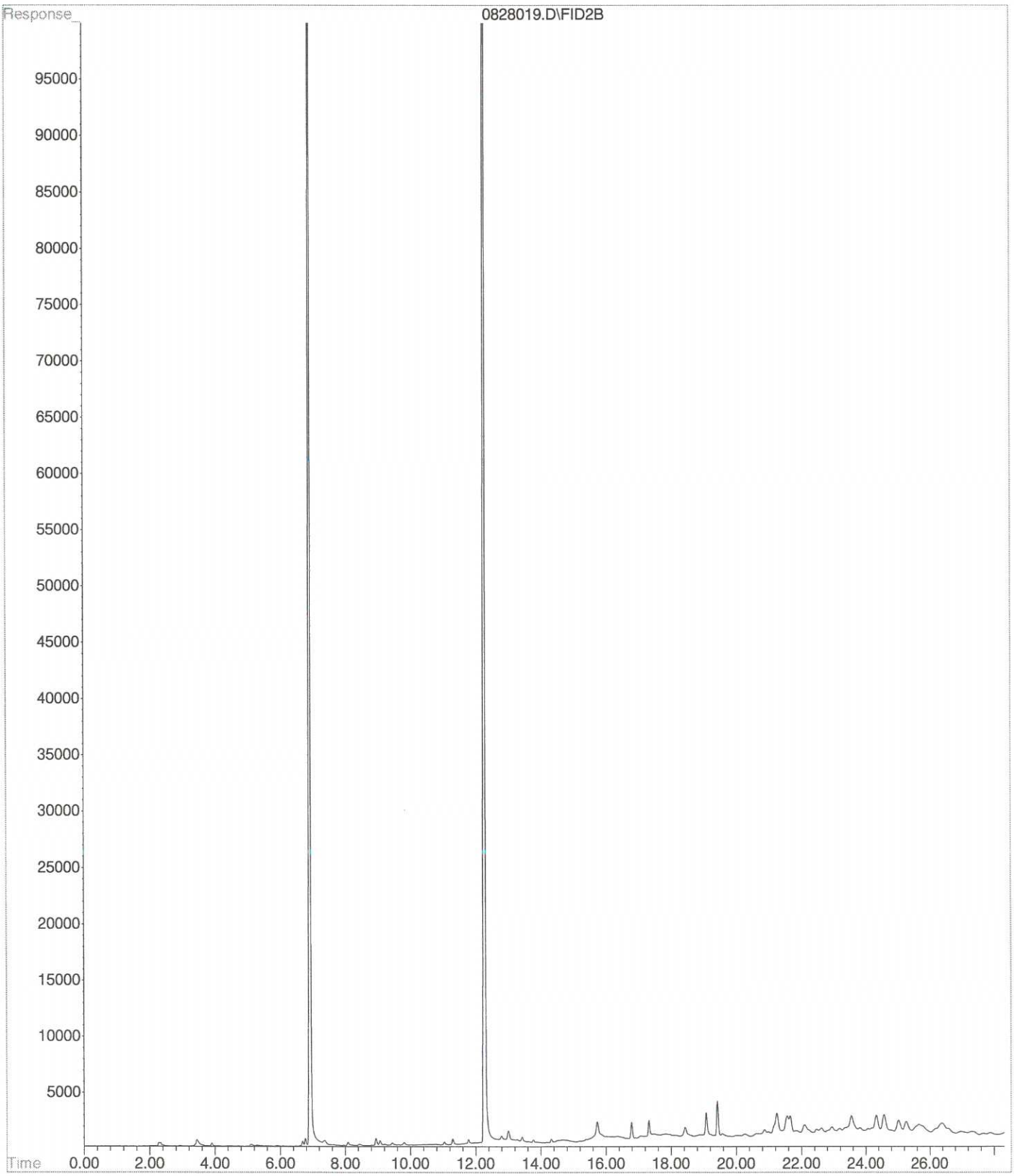
★ This Sample PAHs by Monday evening (Aug 31, 2015).

Chromatograms with final report ☐

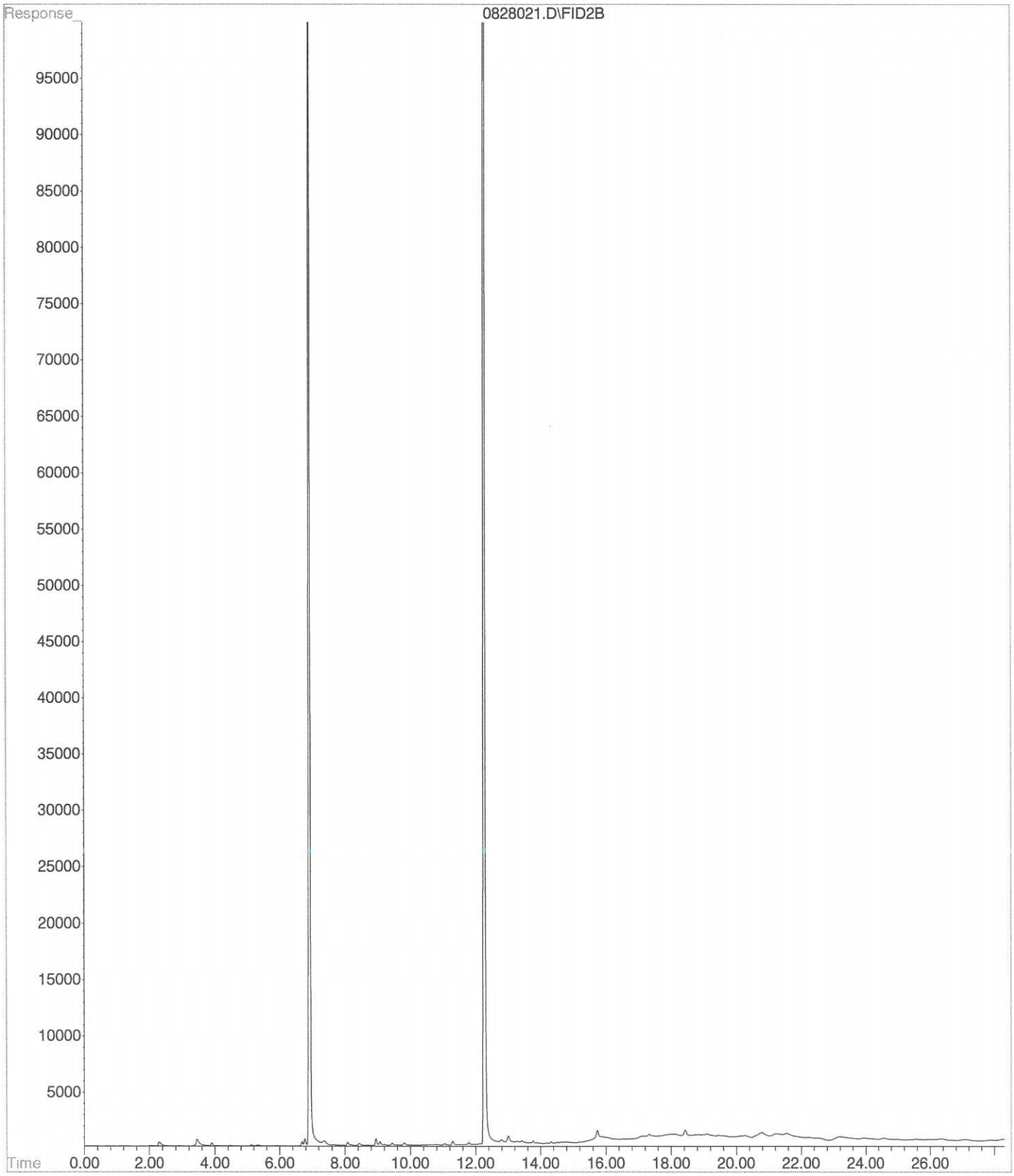
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

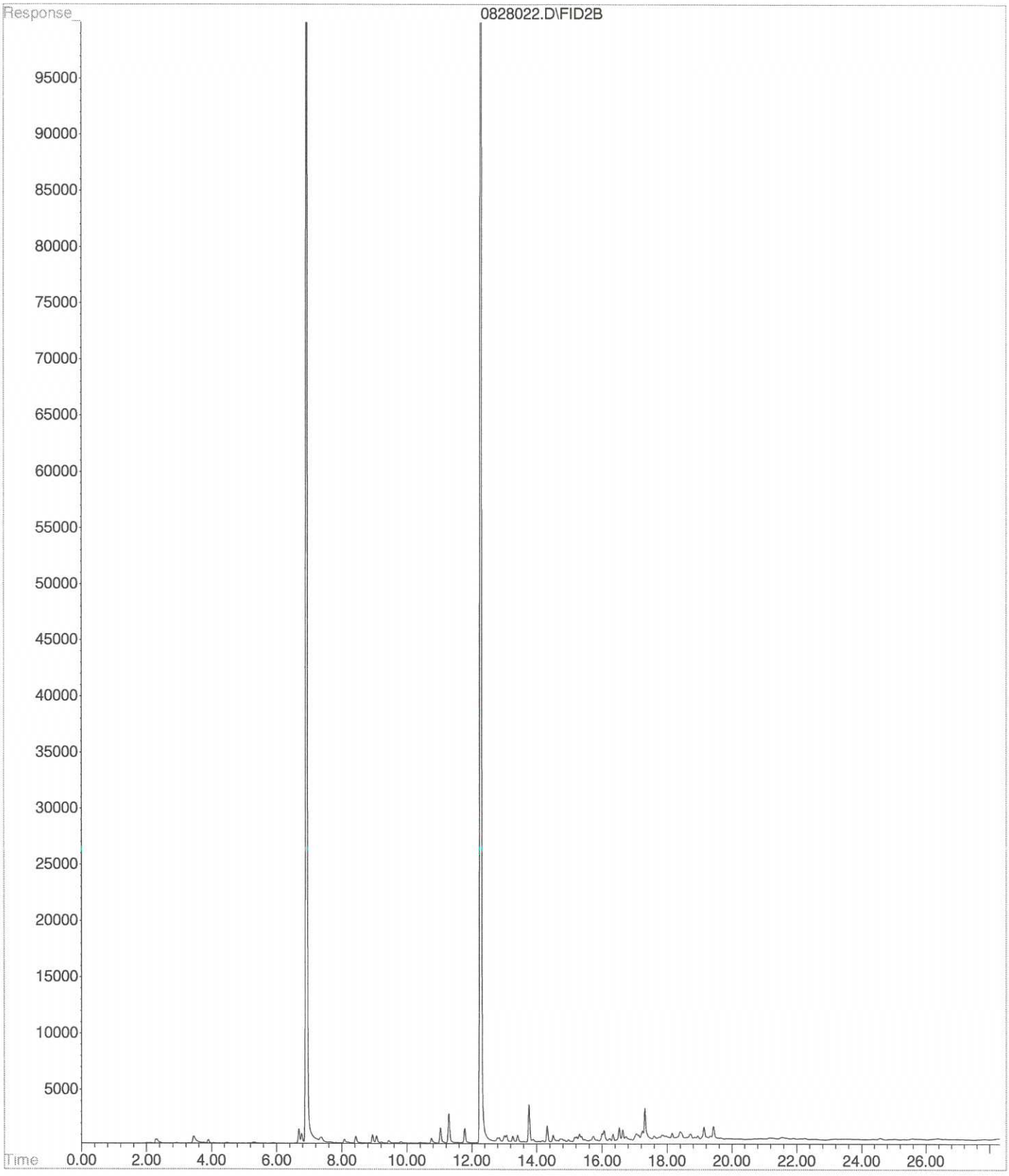
File : X:\BTEX\DARYL\DATA\D150828\0828019.D
Operator :
Acquired : 28 Aug 2015 23:29 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-288-01s
Misc Info : V2-37-21
Vial Number: 19



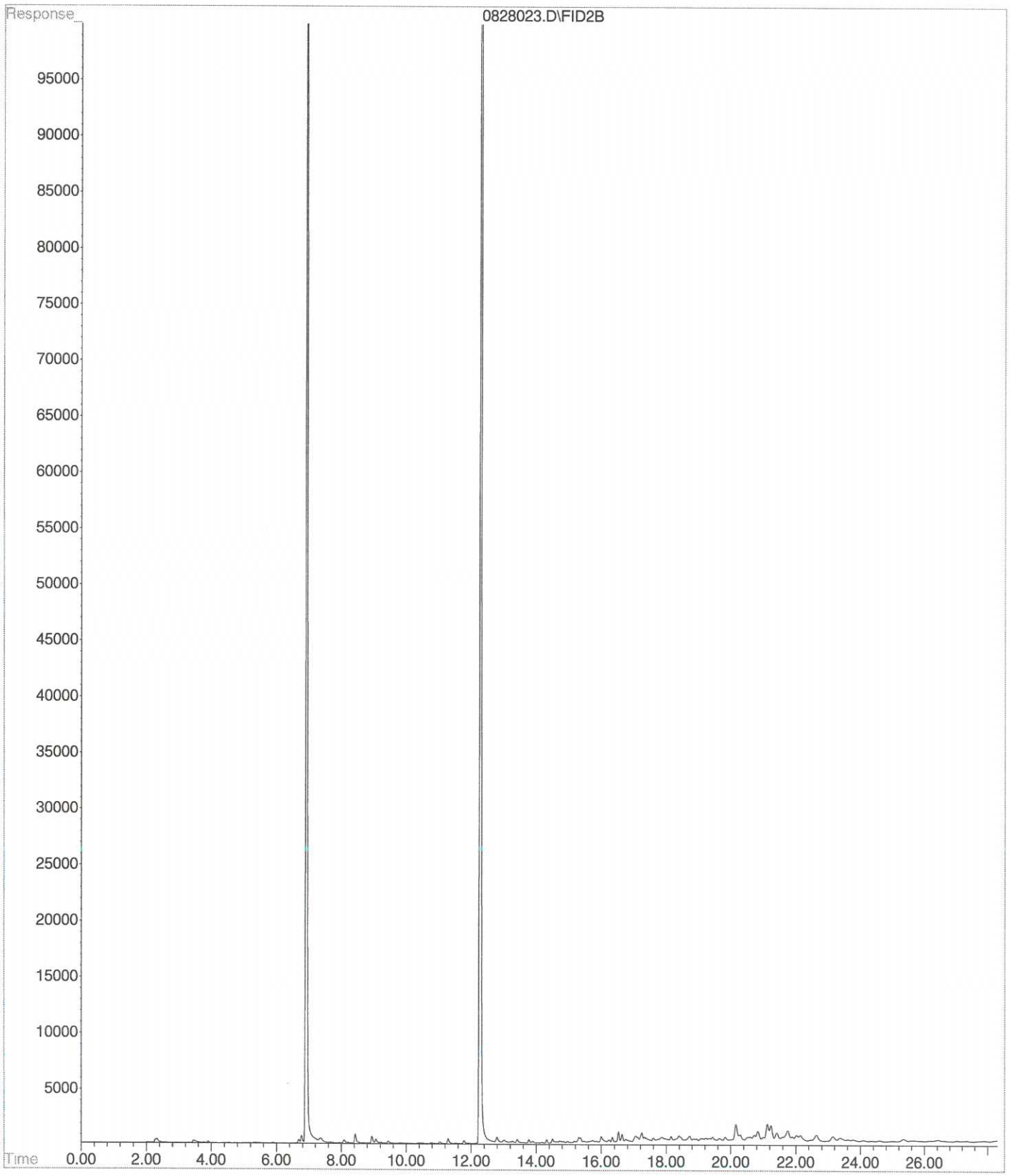
File : X:\BTEX\DARYL\DATA\D150828\0828021.D
Operator :
Acquired : 29 Aug 2015 00:36 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-288-02s
Misc Info : V2-37-21
Vial Number: 21



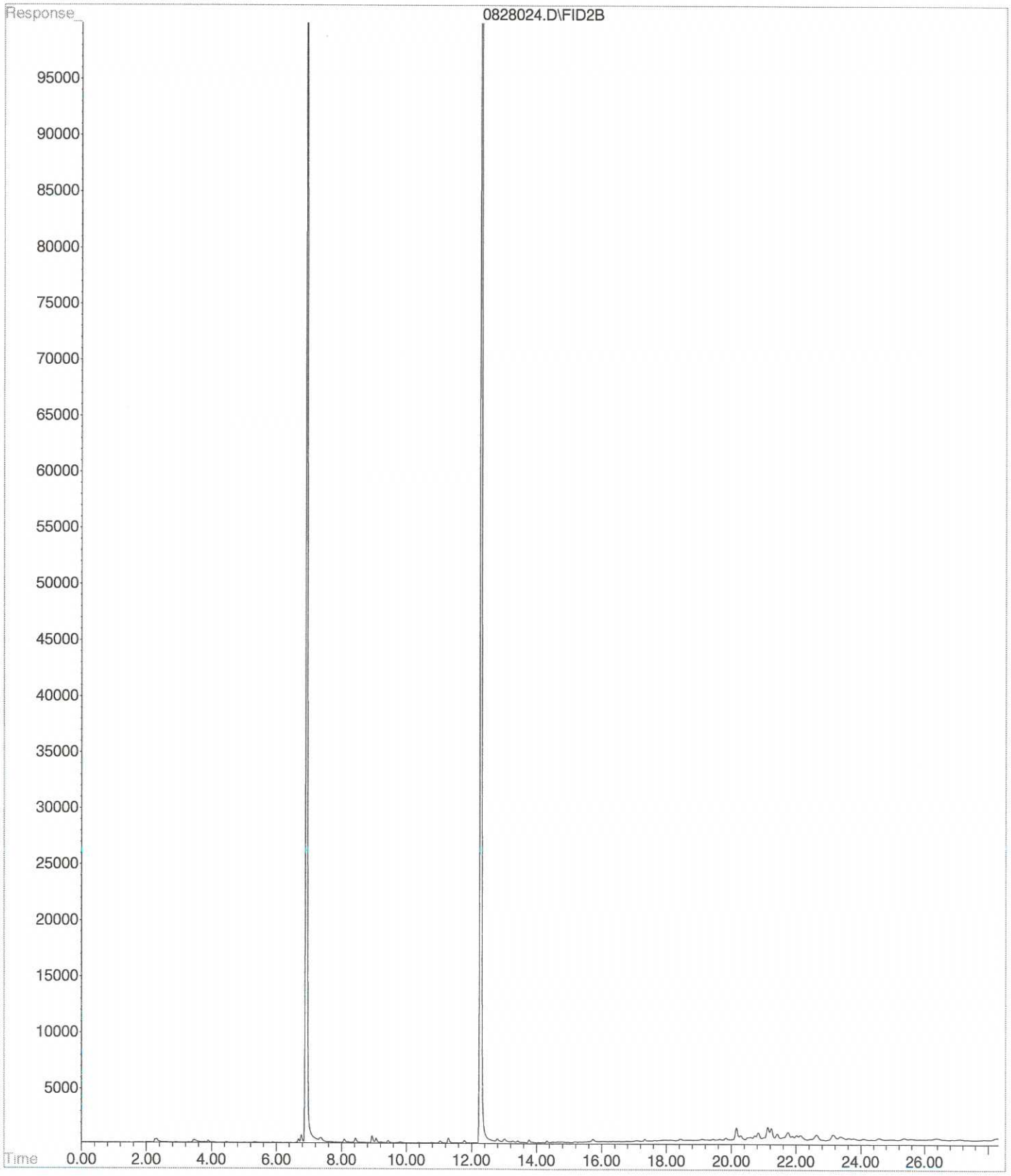
File : X:\BTEX\DARYL\DATA\D150828\0828022.D
Operator :
Acquired : 29 Aug 2015 1:10 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-288-03s
Misc Info : V2-37-21
Vial Number: 22



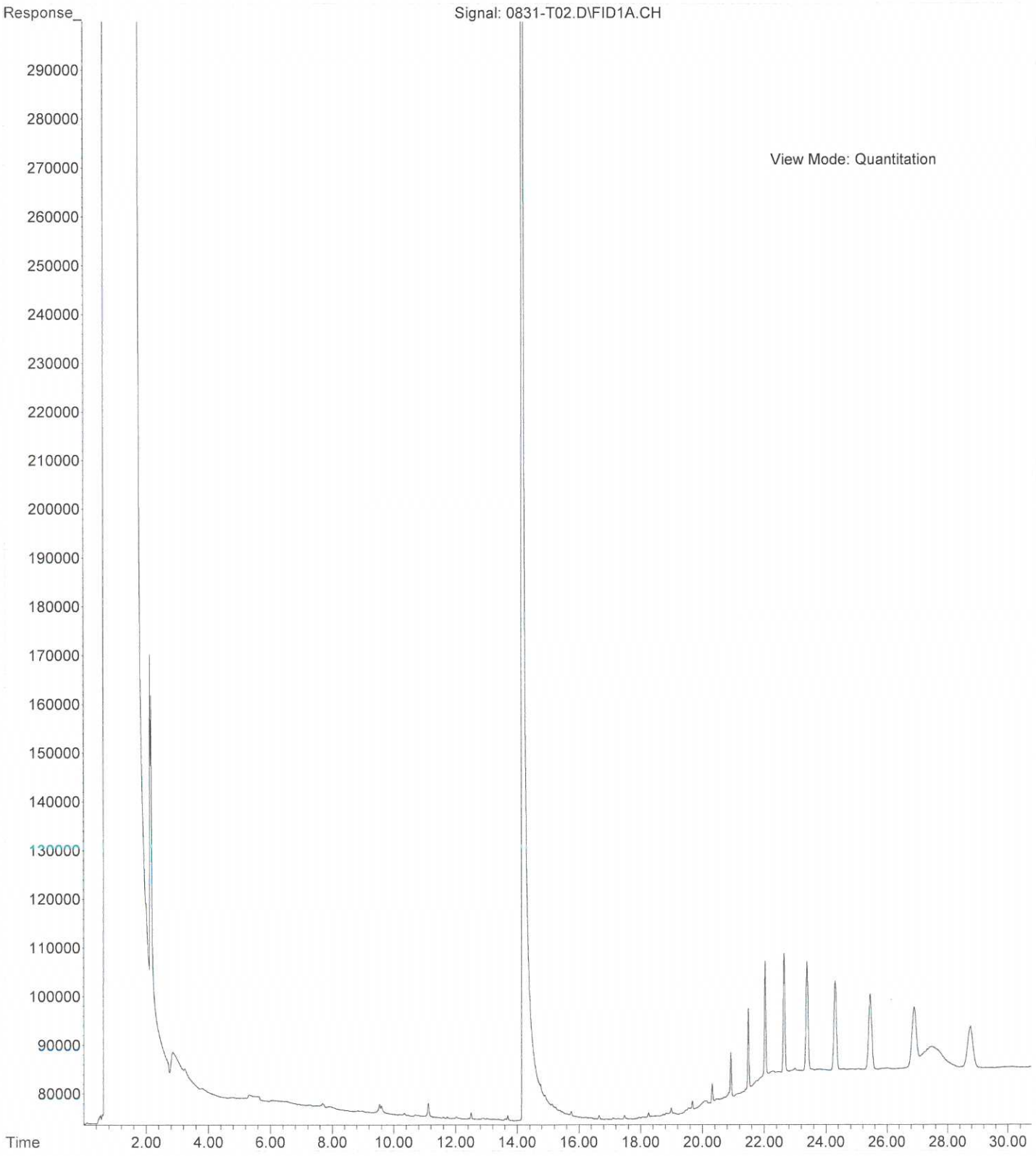
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Operator :
Acquired : 29 Aug 2015 1:43 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-288-04s
Misc Info : V2-37-21
Vial Number: 23



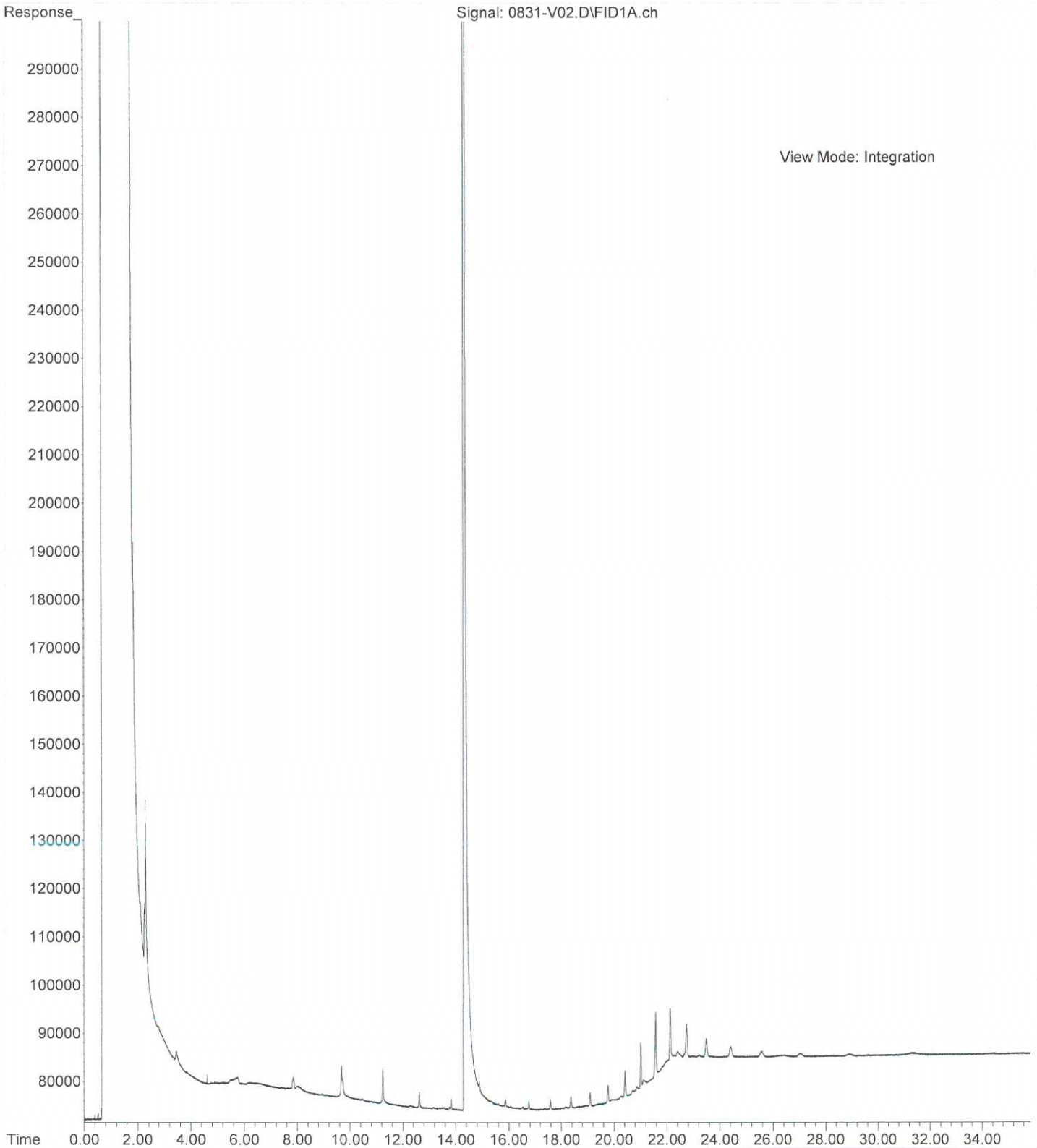
File : X:\BTEX\DARYL\DATA\D150828\0828024.D
Operator :
Acquired : 29 Aug 2015 2:16 using AcqMethod 150709B.M
Instrument : Daryl
Sample Name: 08-288-05s
Misc Info : V2-37-21
Vial Number: 24



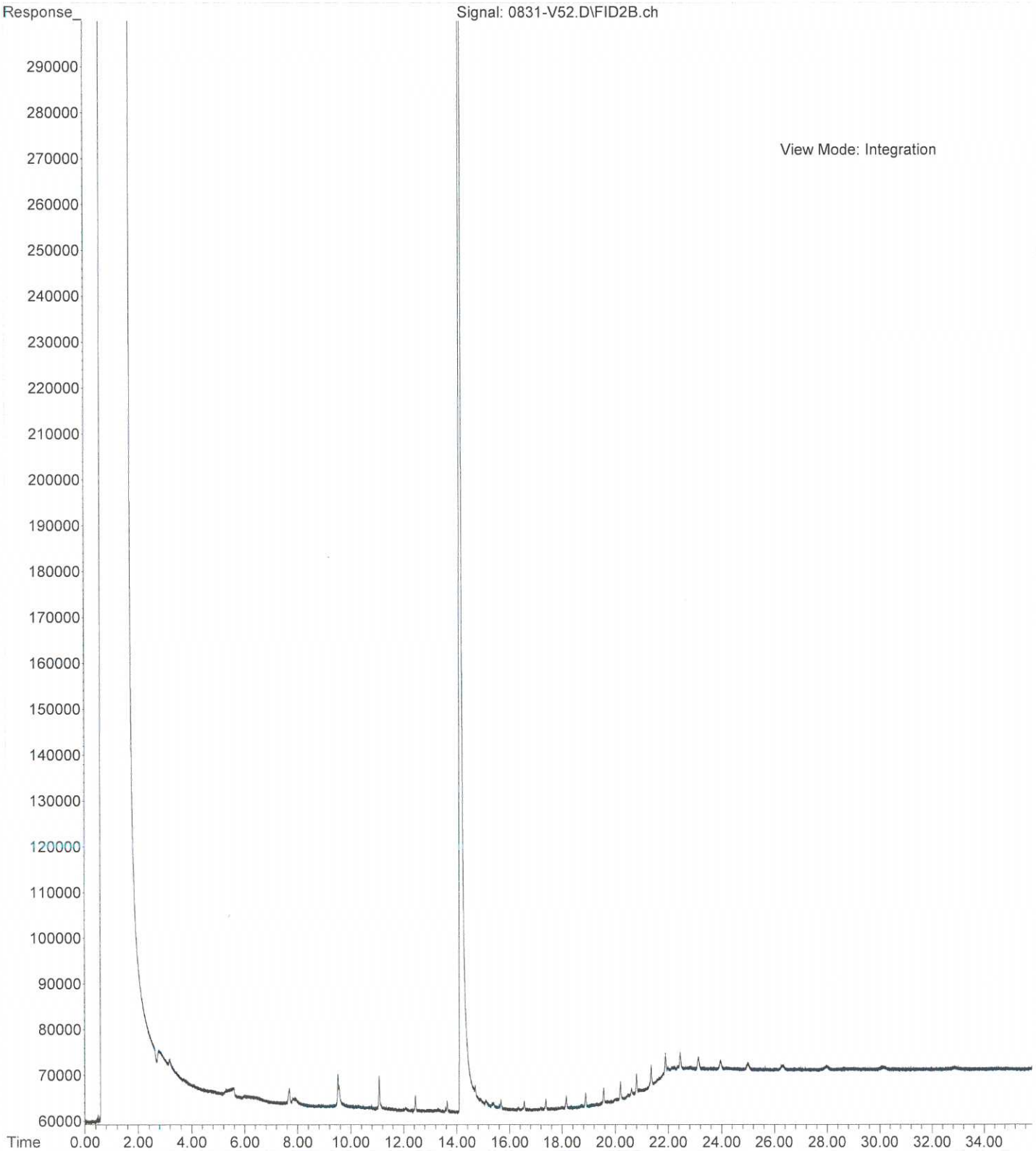
File :X:\DIESELS\TERI\DATA\T150831\0831-T02.D
Operator : ZT
Acquired : 31 Aug 2015 10:15 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-288-01
Misc Info :
Vial Number: 2



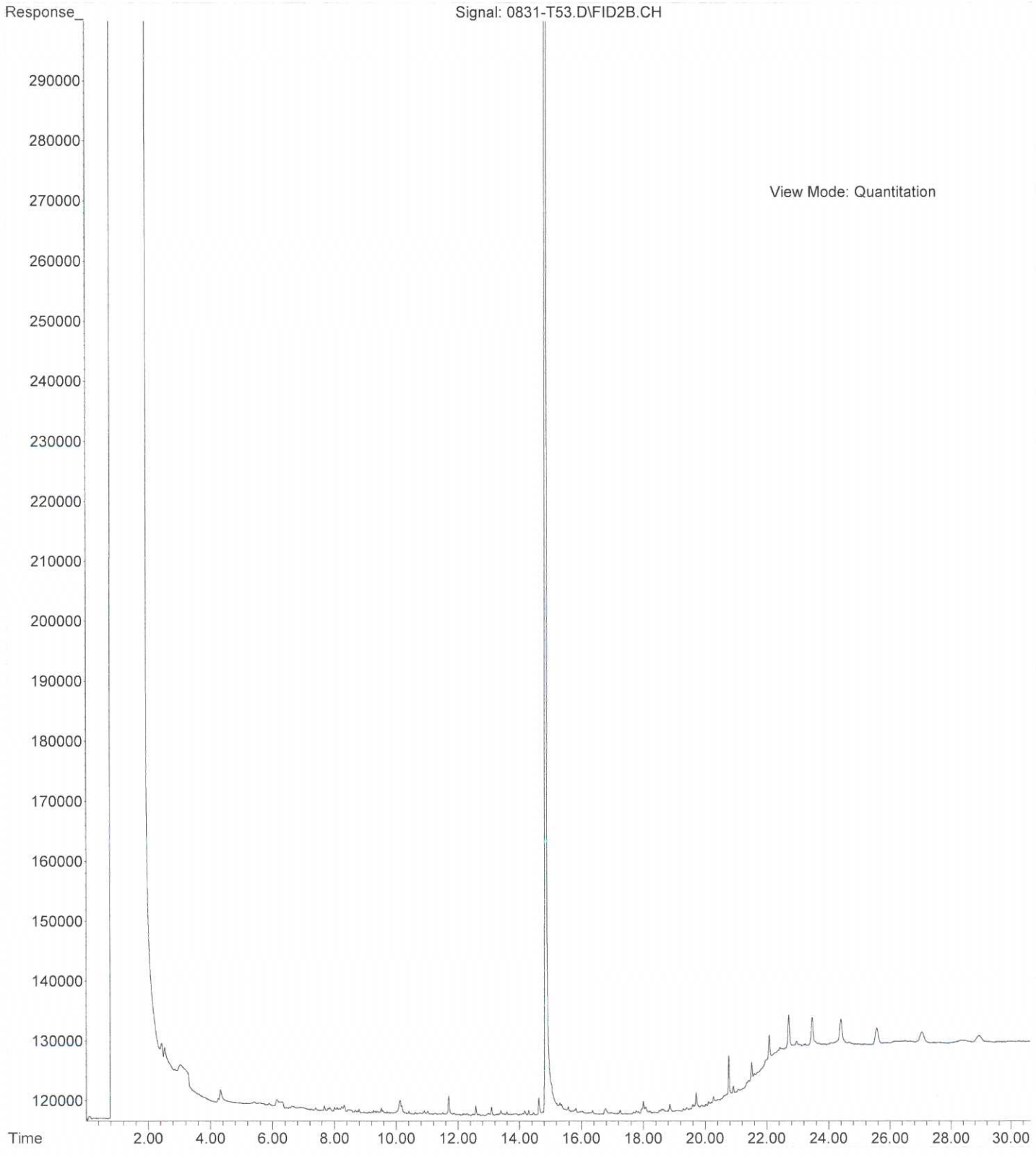
File : X:\DIESELS\VIGO\DATA\V150831\0831-V02.D
Operator :
Acquired : 31 Aug 2015 10:33 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-288-02
Misc Info :
Vial Number: 2



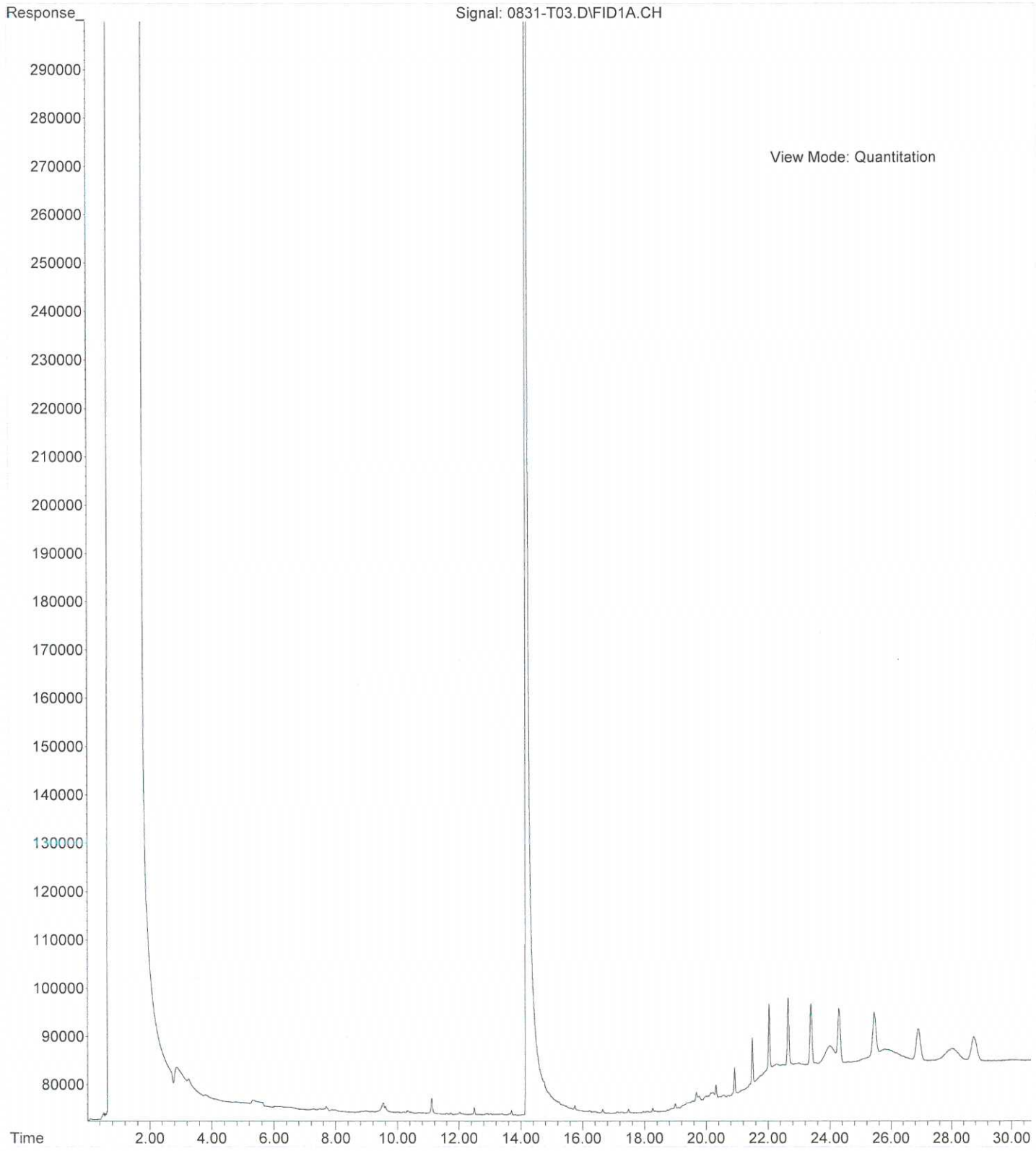
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Operator :
Acquired : 31 Aug 2015 10:33 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-288-03
Misc Info :
Vial Number: 52



File :X:\DIESELS\TERI\DATA\T150831.SEC\0831-T53.D
Operator : ZT
Acquired : 31 Aug 2015 10:54 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-288-04
Misc Info :
Vial Number: 53



File : X:\DIESELS\TERI\DATA\T150831\0831-T03.D
Operator : ZT
Acquired : 31 Aug 2015 10:54 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-288-05
Misc Info :
Vial Number: 3



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 13, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-107

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 12, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 13, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-107
Project: 21138-001-03

Case Narrative

Samples were collected on August 12, 2015 and received by the laboratory on August 12, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 13, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-107
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
ELEVTR-PRODUCT	08-107-01	Product	8-12-15	8-12-15	
HOIST-PRODUCT	08-107-02	Product	8-12-15	8-12-15	

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Date of Report: August 13, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-107
Project: 21138-001-03

NWTPH-HCID

Matrix: Product
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**ELEVTR-PRODUCT**					
Laboratory ID:	08-107-01					
Gasoline Range Organics	**ND**	1400	NWTPH-HCID	8-12-15	8-12-15	U1
Diesel Range Organics	**Detected**	2500	NWTPH-HCID	8-12-15	8-12-15	N
Lube Oil	**Detected**	4900	NWTPH-HCID	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**HOIST-PRODUCT**					
Laboratory ID:	08-107-02					
Gasoline Range Organics	**ND**	2300	NWTPH-HCID	8-12-15	8-12-15	U1
Diesel Range Organics	**Detected**	2400	NWTPH-HCID	8-12-15	8-12-15	N
Lube Oil	**Detected**	4800	NWTPH-HCID	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*97*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 13, 2015
Samples Submitted: August 12, 2015
Laboratory Reference: 1508-107
Project: 21138-001-03

NWTPH-HCID
QUALITY CONTROL

Matrix: Product
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0812P1					
Gasoline Range Organics	**ND**	1000	NWTPH-HCID	8-12-15	8-12-15	
Diesel Range Organics	**ND**	2500	NWTPH-HCID	8-12-15	8-12-15	
Lube Oil Range Organics	**ND**	5000	NWTPH-HCID	8-12-15	8-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One)

- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 08-107

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	ELEVTR-PRODUCT	8/12/15	1115	P	1	X																
2	HOIST-PRODUCT	8/12/15	1120	P	1	X																

	Signature	Company	Date	Time
Relinquished		GEI	8/12/15	1240
Received		GEI	8/12/15	1240
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

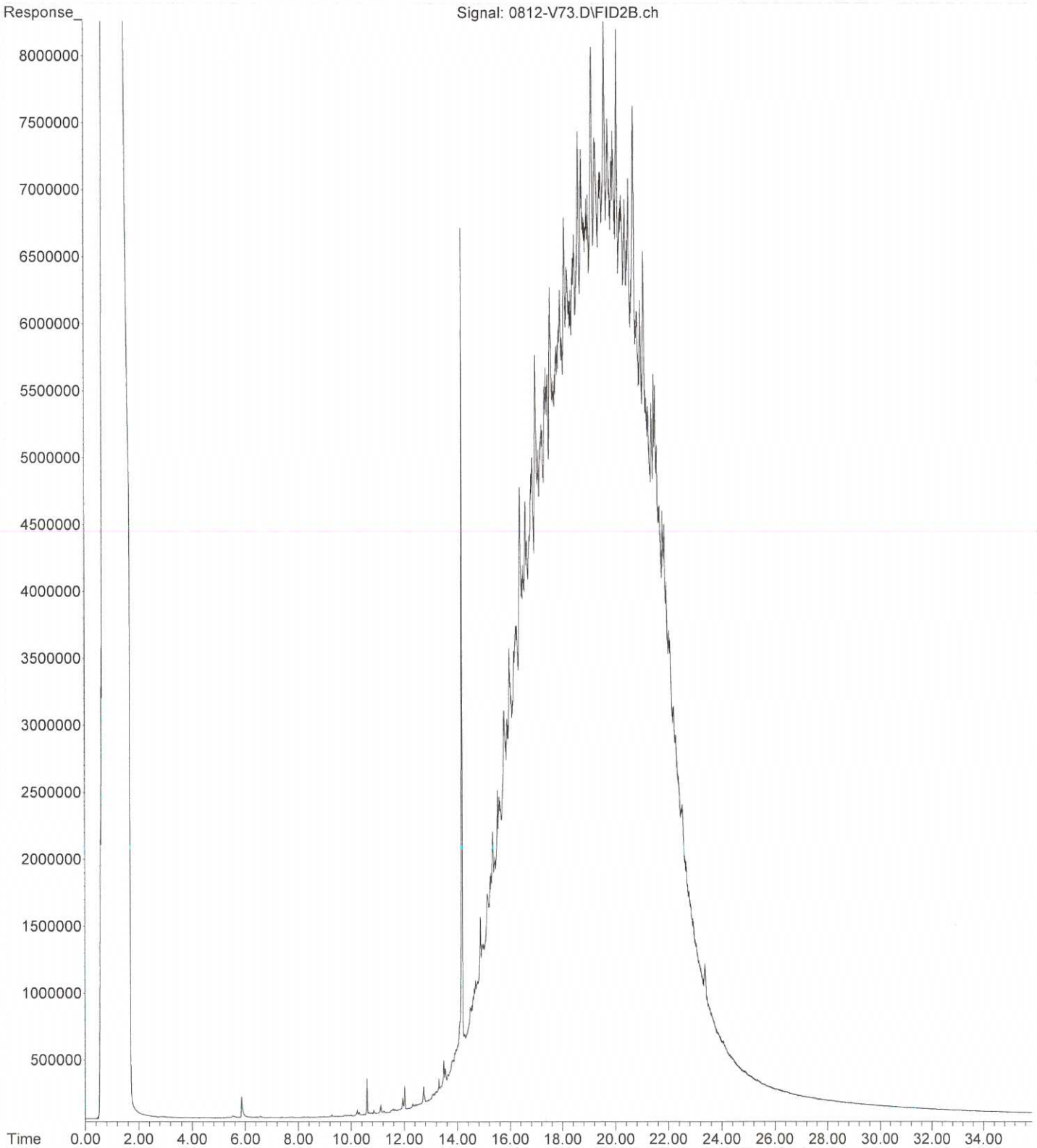
Reviewed/Date

Chromatograms with final report ☐

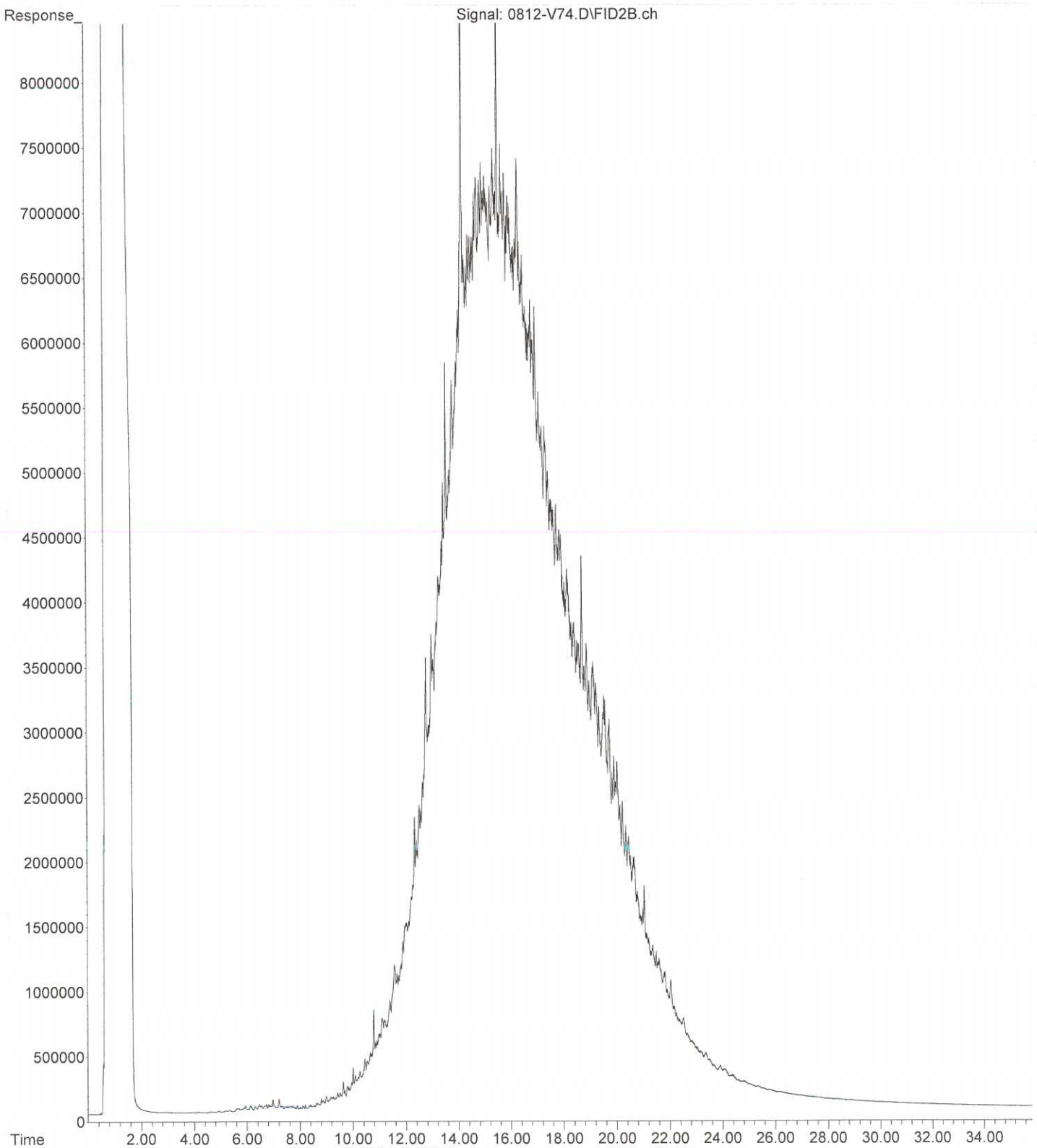
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

File :X:\DIESELS\VIGO\DATA\V150812.SEC\0812-V73.D
Operator :
Acquired : 13 Aug 2015 3:29 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 08-107-01
Misc Info :
Vial Number: 73



File :X:\DIESELS\VIGO\DATA\V150812.SEC\0812-V74.D
Operator :
Acquired : 13 Aug 2015 4:10 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 08-107-02
Misc Info :
Vial Number: 74



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

September 8, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1509-041

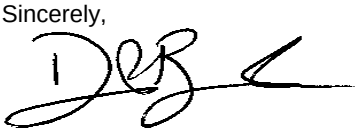
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on September 2, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

Case Narrative

Samples were collected on August 24, 25, and 26, 2015 and received by the laboratory on September 2, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
ELEVTREX-1-20.0	09-041-01	Soil	8-26-15	9-2-15	
MASSEX-4-9.0	09-041-02	Soil	8-24-15	9-2-15	
MASSEX-10-9.0	09-041-03	Soil	8-25-15	9-2-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**ELEVTREX-1-20.0**					
Laboratory ID:	09-041-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	9-3-15	9-3-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	9-3-15	9-3-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*80*	*50-150*				
Client ID:	**MASSEX-4-9.0**					
Laboratory ID:	09-041-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	9-3-15	9-3-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	9-3-15	9-3-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*75*	*50-150*				
Client ID:	**MASSEX-10-9.0**					
Laboratory ID:	09-041-03					
Diesel Range Organics	**ND**	28	NWTPH-Dx	9-3-15	9-3-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	9-3-15	9-3-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*75*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**ELEVTREX-1-20.0**					
Laboratory ID:	09-041-01					
Benzo[a]anthracene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Chrysene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Benzo[b]fluoranthene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Benzo(j,k)fluoranthene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Benzo[a]pyrene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Dibenz[a,h]anthracene	**ND**	0.0074	EPA 8270D/SIM	9-4-15	9-4-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*54*	*32 - 114*				
Pyrene-d10	*48*	*33 - 121*				
Terphenyl-d14	*49*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0903S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	9-3-15	9-3-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	9-3-15	9-3-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	09-036-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*69* *79*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0904S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	9-4-15	9-4-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*89*	*32 - 114*				
Pyrene-d10	*82*	*33 - 121*				
Terphenyl-d14	*81*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

cPAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	09-041-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0540**	**0.0470**	0.0833	0.0833	ND	65	56	44 - 107	14	29	
Acenaphthylene	**0.0634**	**0.0545**	0.0833	0.0833	ND	76	65	44 - 121	15	27	
Acenaphthene	**0.0565**	**0.0483**	0.0833	0.0833	ND	68	58	47 - 109	16	26	
Fluorene	**0.0579**	**0.0492**	0.0833	0.0833	ND	70	59	49 - 115	16	28	
Phenanthrene	**0.0559**	**0.0484**	0.0833	0.0833	ND	67	58	45 - 114	14	26	
Anthracene	**0.0949**	**0.0793**	0.0833	0.0833	ND	114	95	43 - 140	18	27	
Fluoranthene	**0.0546**	**0.0464**	0.0833	0.0833	ND	66	56	44 - 126	16	27	
Pyrene	**0.0542**	**0.0457**	0.0833	0.0833	ND	65	55	43 - 125	17	27	
Benzo[a]anthracene	**0.0638**	**0.0542**	0.0833	0.0833	ND	77	65	42 - 134	16	27	
Chrysene	**0.0547**	**0.0468**	0.0833	0.0833	ND	66	56	45 - 114	16	27	
Benzo[b]fluoranthene	**0.0532**	**0.0424**	0.0833	0.0833	ND	64	51	38 - 131	23	33	
Benzo(j,k)fluoranthene	**0.0464**	**0.0412**	0.0833	0.0833	ND	56	49	44 - 114	12	34	
Benzo[a]pyrene	**0.0522**	**0.0443**	0.0833	0.0833	ND	63	53	40 - 136	16	29	
Indeno(1,2,3-c,d)pyrene	**0.0483**	**0.0405**	0.0833	0.0833	ND	58	49	45 - 126	18	30	
Dibenz[a,h]anthracene	**0.0501**	**0.0422**	0.0833	0.0833	ND	60	51	46 - 121	17	28	
Benzo[g,h,i]perylene	**0.0502**	**0.0421**	0.0833	0.0833	ND	60	51	43 - 120	18	31	
Surrogate:											
2-Fluorobiphenyl						*67*	*57*	*32 - 114*			
Pyrene-d10						*59*	*50*	*33 - 121*			
Terphenyl-d14						*60*	*51*	*31 - 116*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: September 8, 2015
Samples Submitted: September 2, 2015
Laboratory Reference: 1509-041
Project: 21138-001-03

% MOISTURE

Date Analyzed: 9-3-15

Client ID	Lab ID	% Moisture
ELEVTREX-1-20.0	09-041-01	10
MASSEX-4-9.0	09-041-02	11
MASSEX-10-9.0	09-041-03	10

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☒ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 09-041

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	CPAHs	% Moisture
1	ELEVTREX-1-20.0	8/26/15	0900	S	1				X													X	X
2	MASSEX-4-9.0	8/24/15	1310	↓	1				X														↓
3	MASSEX-10-9.0	8/25/15	1020	↓	1				X														

	Signature	Company	Date	Time
Relinquished		GEI	9/2/15	1800
Received		OSE	9/2/15	1800
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

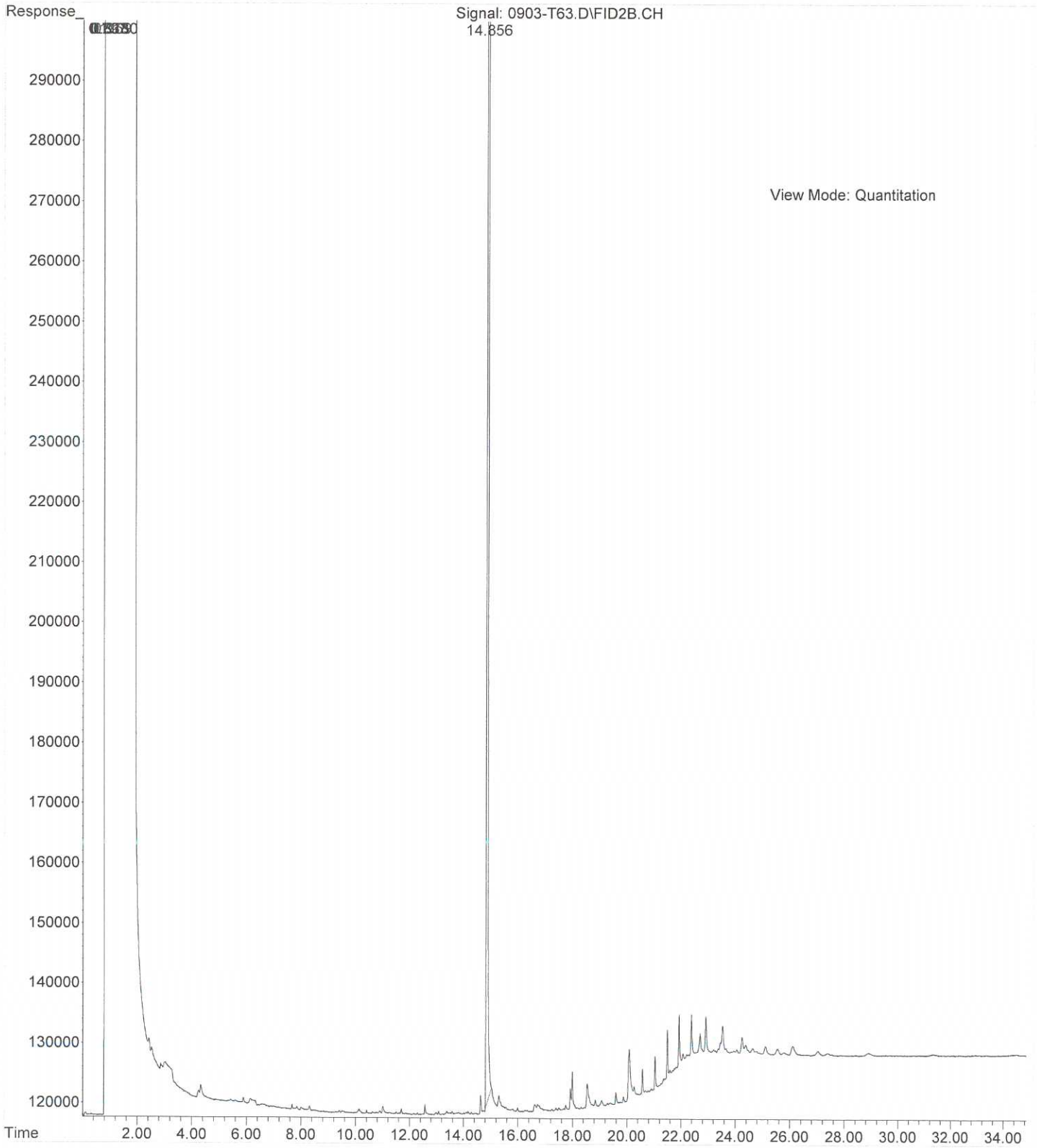
Comments/Special Instructions

Chromatograms with final report ☐

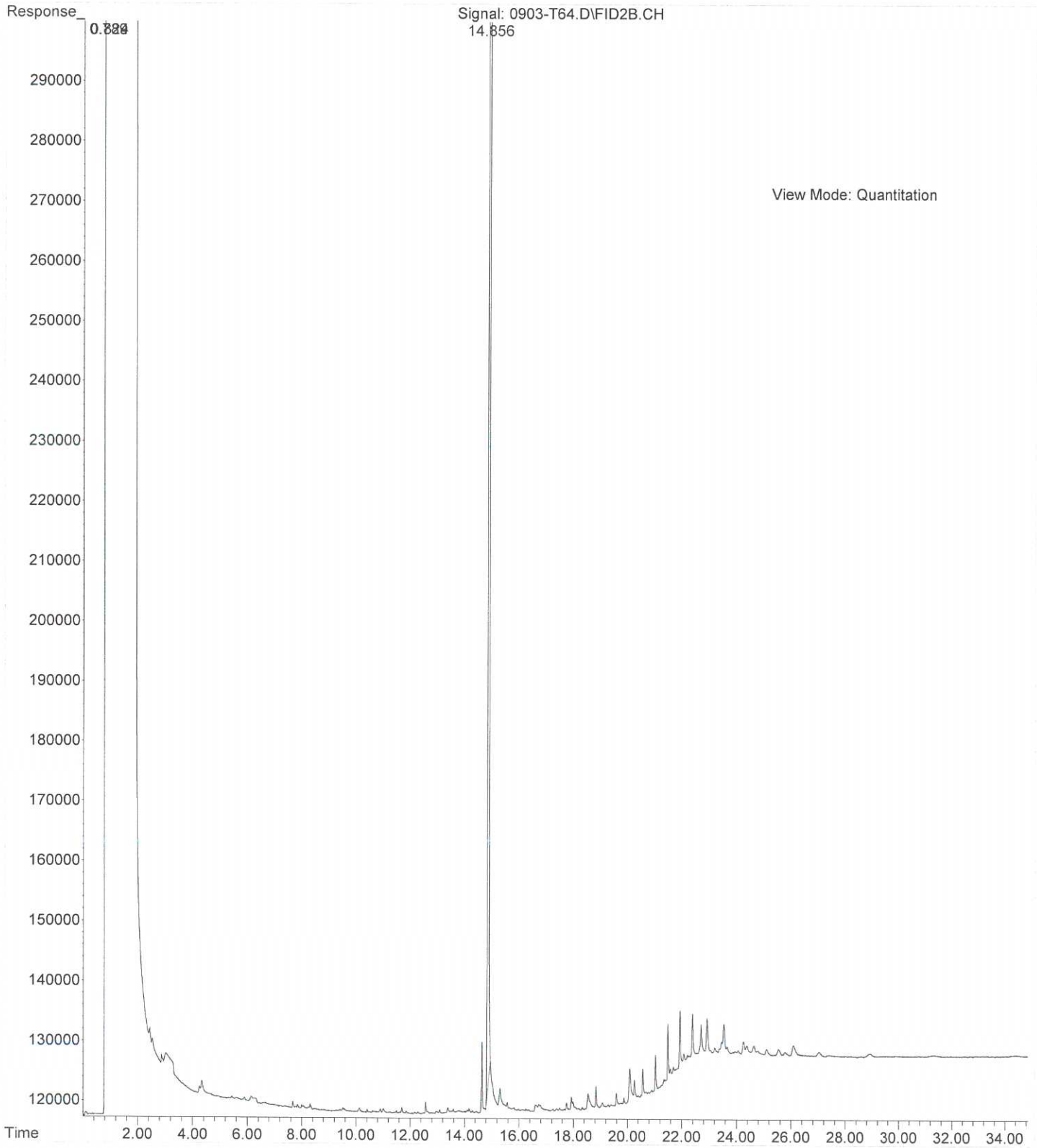
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

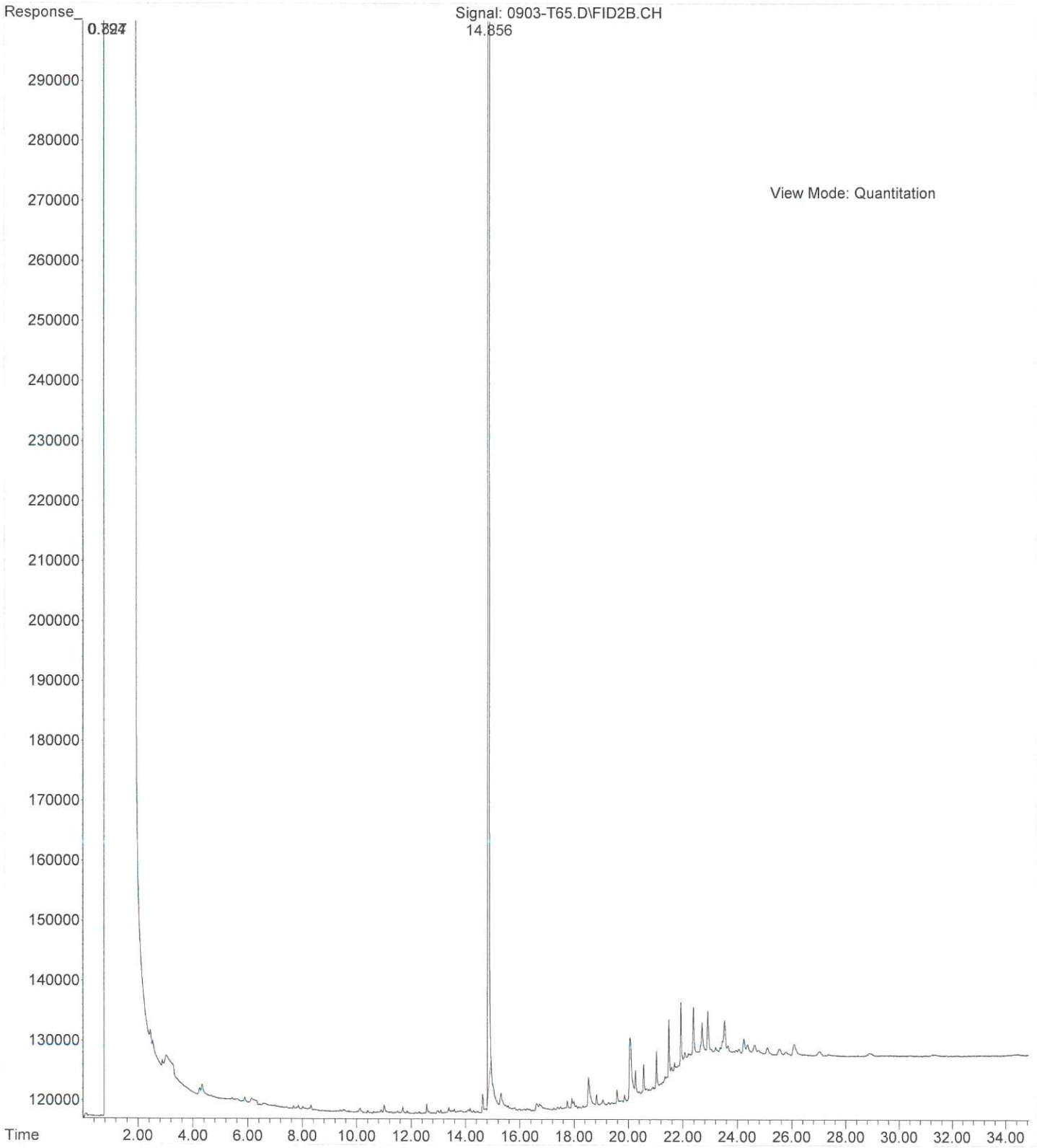
File :X:\DIESELS\TERI\DATA\T150903.SEC\0903-T63.D
Operator : ZT
Acquired : 03 Sep 2015 21:24 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 09-041-01
Misc Info :
Vial Number: 63



File :X:\DIESELS\TERI\DATA\T150903.SEC\0903-T64.D
Operator : ZT
Acquired : 03 Sep 2015 22:07 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 09-041-02
Misc Info :
Vial Number: 64



File :X:\DIESELS\TERI\DATA\T150903.SEC\0903-T65.D
Operator : ZT
Acquired : 03 Sep 2015 22:50 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 09-041-03
Misc Info :
Vial Number: 65



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 31, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-201

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 19, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

Case Narrative

Samples were collected on August 14, 15, 17, 18, and 19, 2015 and received by the laboratory on August 19, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MASSEX-1-10.0	08-201-01	Soil	8-14-15	8-19-15	
MASSEX-2-10.0	08-201-02	Soil	8-14-15	8-19-15	
MASSEX-3-7.0	08-201-03	Soil	8-15-15	8-19-15	
MASSEX-4-7.0	08-201-04	Soil	8-15-15	8-19-15	
MASSEX-5-7.0	08-201-05	Soil	8-17-15	8-19-15	
MASSEX-6-7.0	08-201-06	Soil	8-17-15	8-19-15	
MASSEX-7-7.0	08-201-07	Soil	8-18-15	8-19-15	
MASSEX-8-7.0	08-201-08	Soil	8-18-15	8-19-15	
MASSEX-9-8.0	08-201-09	Soil	8-19-15	8-19-15	
MASSEX-10-8.0	08-201-10	Soil	8-19-15	8-19-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-1-10.0**					
Laboratory ID:	08-201-01					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-20-15	8-3-15	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	8-20-15	8-3-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-2-10.0**					
Laboratory ID:	08-201-02					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**MASSEX-3-7.0**					
Laboratory ID:	08-201-03					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				
Client ID:	**MASSEX-4-7.0**					
Laboratory ID:	08-201-04					
Diesel Range Organics	**ND**	29	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil	**61**	58	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				
Client ID:	**MASSEX-5-7.0**					
Laboratory ID:	08-201-05					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*81*	*50-150*				
Client ID:	**MASSEX-6-7.0**					
Laboratory ID:	08-201-06					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	59	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**MASSEX-7-7.0**					
Laboratory ID:	08-201-07					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*82*	*50-150*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-8-7.0**					
Laboratory ID:	08-201-08					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*79*	*50-150*				
Client ID:	**MASSEX-9-8.0**					
Laboratory ID:	08-201-09					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	60	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*98*	*50-150*				
Client ID:	**MASSEX-10-8.0**					
Laboratory ID:	08-201-10					
Diesel Range Organics	**ND**	30	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil	**66**	59	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*93*	*50-150*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-1-10.0**					
Laboratory ID:	08-201-01					
Benzo[a]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Chrysene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Benzo(j,k)fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*71*	*32 - 114*				
Pyrene-d10	*66*	*33 - 121*				
Terphenyl-d14	*80*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-2-10.0**					
Laboratory ID:	08-201-02					
Benzo[a]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*105*	*32 - 114*				
Pyrene-d10	*65*	*33 - 121*				
Terphenyl-d14	*109*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-3-7.0**					
Laboratory ID:	08-201-03					
Benzo[a]anthracene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0080	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*69*	*32 - 114*				
Pyrene-d10	*69*	*33 - 121*				
Terphenyl-d14	*79*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-4-7.0**					
Laboratory ID:	08-201-04					
Benzo[a]anthracene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0078	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*73*	*32 - 114*				
Pyrene-d10	*76*	*33 - 121*				
Terphenyl-d14	*87*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-5-7.0**					
Laboratory ID:	08-201-05					
Benzo[a]anthracene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*32 - 114*				
Pyrene-d10	*71*	*33 - 121*				
Terphenyl-d14	*79*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-6-7.0**					
Laboratory ID:	08-201-06					
Benzo[a]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*68*	*32 - 114*				
Pyrene-d10	*69*	*33 - 121*				
Terphenyl-d14	*79*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
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cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-7-7.0**					
Laboratory ID:	08-201-07					
Benzo[a]anthracene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0083	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*62*	*32 - 114*				
Pyrene-d10	*66*	*33 - 121*				
Terphenyl-d14	*76*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-8-7.0**					
Laboratory ID:	08-201-08					
Benzo[a]anthracene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0081	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*60*	*32 - 114*				
Pyrene-d10	*63*	*33 - 121*				
Terphenyl-d14	*70*	*31 - 116*				

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Date of Report: August 31, 2015
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Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-9-8.0**					
Laboratory ID:	08-201-09					
Benzo[a]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*68*	*32 - 114*				
Pyrene-d10	*67*	*33 - 121*				
Terphenyl-d14	*77*	*31 - 116*				

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Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-10-8.0**					
Laboratory ID:	08-201-10					
Benzo[a]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0079	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*61*	*32 - 114*				
Pyrene-d10	*63*	*33 - 121*				
Terphenyl-d14	*73*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0820S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-20-15	8-3-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-20-15	8-3-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-203-04										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil	**71.9**	**65.6**	NA	NA		NA		NA	9	NA	
Surrogate:											
o-Terphenyl						*101*	*95*	*50-150*			

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0826S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-26-15	8-26-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	08-201-04									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil	**52.0**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*85* *93*	*50-150*			

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0820S2					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*91*	*32 - 114*				
Pyrene-d10	*93*	*33 - 121*				
Terphenyl-d14	*104*	*31 - 116*				

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Project: 21138-001-03

cPAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-201-01										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0602**	**0.0620**	0.0833	0.0833	ND	72	74	44 - 107	3	29	
Acenaphthylene	**0.0598**	**0.0615**	0.0833	0.0833	ND	72	74	44 - 121	3	27	
Acenaphthene	**0.0607**	**0.0621**	0.0833	0.0833	ND	73	75	47 - 109	2	26	
Fluorene	**0.0620**	**0.0629**	0.0833	0.0833	ND	74	76	49 - 115	1	28	
Phenanthrene	**0.0597**	**0.0590**	0.0833	0.0833	ND	72	71	45 - 114	1	26	
Anthracene	**0.0912**	**0.0900**	0.0833	0.0833	ND	109	108	43 - 140	1	27	
Fluoranthene	**0.0557**	**0.0549**	0.0833	0.0833	ND	67	66	44 - 126	1	27	
Pyrene	**0.0612**	**0.0606**	0.0833	0.0833	ND	73	73	43 - 125	1	27	
Benzo[a]anthracene	**0.0694**	**0.0687**	0.0833	0.0833	ND	83	82	42 - 134	1	27	
Chrysene	**0.0569**	**0.0564**	0.0833	0.0833	ND	68	68	45 - 114	1	27	
Benzo[b]fluoranthene	**0.0571**	**0.0575**	0.0833	0.0833	ND	69	69	38 - 131	1	33	
Benzo(j,k)fluoranthene	**0.0604**	**0.0596**	0.0833	0.0833	ND	73	72	44 - 114	1	34	
Benzo[a]pyrene	**0.0609**	**0.0608**	0.0833	0.0833	ND	73	73	40 - 136	0	29	
Indeno(1,2,3-c,d)pyrene	**0.0586**	**0.0586**	0.0833	0.0833	ND	70	70	45 - 126	0	30	
Dibenz[a,h]anthracene	**0.0556**	**0.0558**	0.0833	0.0833	ND	67	67	46 - 121	0	28	
Benzo[g,h,i]perylene	**0.0589**	**0.0594**	0.0833	0.0833	ND	71	71	43 - 120	1	31	
Surrogate:											
2-Fluorobiphenyl						*82*	*85*	*32 - 114*			
Pyrene-d10						*70*	*70*	*33 - 121*			
Terphenyl-d14						*87*	*88*	*31 - 116*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0824S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*32 - 114*				
Pyrene-d10	*86*	*33 - 121*				
Terphenyl-d14	*94*	*31 - 116*				

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

cPAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-201-02										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0625**	**0.0608**	0.0833	0.0833	ND	75	73	44 - 107	3	29	
Acenaphthylene	**0.0667**	**0.0662**	0.0833	0.0833	ND	80	79	44 - 121	1	27	
Acenaphthene	**0.0666**	**0.0659**	0.0833	0.0833	ND	80	79	47 - 109	1	26	
Fluorene	**0.0710**	**0.0686**	0.0833	0.0833	ND	85	82	49 - 115	3	28	
Phenanthrene	**0.0645**	**0.0630**	0.0833	0.0833	ND	77	76	45 - 114	2	26	
Anthracene	**0.104**	**0.102**	0.0833	0.0833	ND	125	122	43 - 140	2	27	
Fluoranthene	**0.0642**	**0.0627**	0.0833	0.0833	ND	77	75	44 - 126	2	27	
Pyrene	**0.0684**	**0.0663**	0.0833	0.0833	ND	82	80	43 - 125	3	27	
Benzo[a]anthracene	**0.0810**	**0.0787**	0.0833	0.0833	ND	97	94	42 - 134	3	27	
Chrysene	**0.0609**	**0.0596**	0.0833	0.0833	ND	73	72	45 - 114	2	27	
Benzo[b]fluoranthene	**0.0721**	**0.0694**	0.0833	0.0833	ND	87	83	38 - 131	4	33	
Benzo(j,k)fluoranthene	**0.0647**	**0.0636**	0.0833	0.0833	ND	78	76	44 - 114	2	34	
Benzo[a]pyrene	**0.0735**	**0.0721**	0.0833	0.0833	ND	88	87	40 - 136	2	29	
Indeno(1,2,3-c,d)pyrene	**0.0708**	**0.0709**	0.0833	0.0833	ND	85	85	45 - 126	0	30	
Dibenz[a,h]anthracene	**0.0667**	**0.0651**	0.0833	0.0833	ND	80	78	46 - 121	2	28	
Benzo[g,h,i]perylene	**0.0680**	**0.0664**	0.0833	0.0833	ND	82	80	43 - 120	2	31	
Surrogate:											
2-Fluorobiphenyl						*75*	*75*	*32 - 114*			
Pyrene-d10						*76*	*74*	*33 - 121*			
Terphenyl-d14						*87*	*85*	*31 - 116*			

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Date of Report: August 31, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-201
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-20&24-15

Client ID	Lab ID	% Moisture
MASSEX-1-10.0	08-201-01	15
MASSEX-2-10.0	08-201-02	15
MASSEX-3-7.0	08-201-03	17
MASSEX-4-7.0	08-201-04	14
MASSEX-5-7.0	08-201-05	18
MASSEX-6-7.0	08-201-06	15
MASSEX-7-7.0	08-201-07	20
MASSEX-8-7.0	08-201-08	18
MASSEX-9-8.0	08-201-09	16
MASSEX-10-8.0	08-201-10	16

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One) NO / YES

- [X] Same Day
- [ ] 1 Day
- [ ] 2 Days
- [ ] 3 Days
- [ ] Standard (7 Days) (TPH analysis 5 Days)
- [ ] _____ (other)

Laboratory Number: 08-201

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAHs		HOLD			% Moisture
1	MASSEX-1-10.0	8/14/15	1400	S	1				X													X					X
2	MASSEX-2-10.0	8/14/15	1420						O													O		X			O
3	MASSEX-3-7.0	8/15/15	1210						O													O		X			O
4	MASSEX-4-7.0	8/15/15	1220						O													O		X			O
5	MASSEX-5-7.0	8/17/15	1310						O													O		X			O
6	MASSEX-6-7.0	8/17/15	1335						O													O		X			O
7	MASSEX-7-7.0	8/18/15	1030						O													O		X			O
8	MASSEX-8-7.0	8/18/15	1045						O													O		X			O
9	MASSEX-9-8.0	8/19/15	1130						O													O		X			O
10	MASSEX-10-8.0	8/19/15	1150	↓	↓				O													O		X			O

	Signature	Company	Date	Time
Relinquished		GEI	8/19/15	1640
Received		COSE	8/19/15	1640
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions

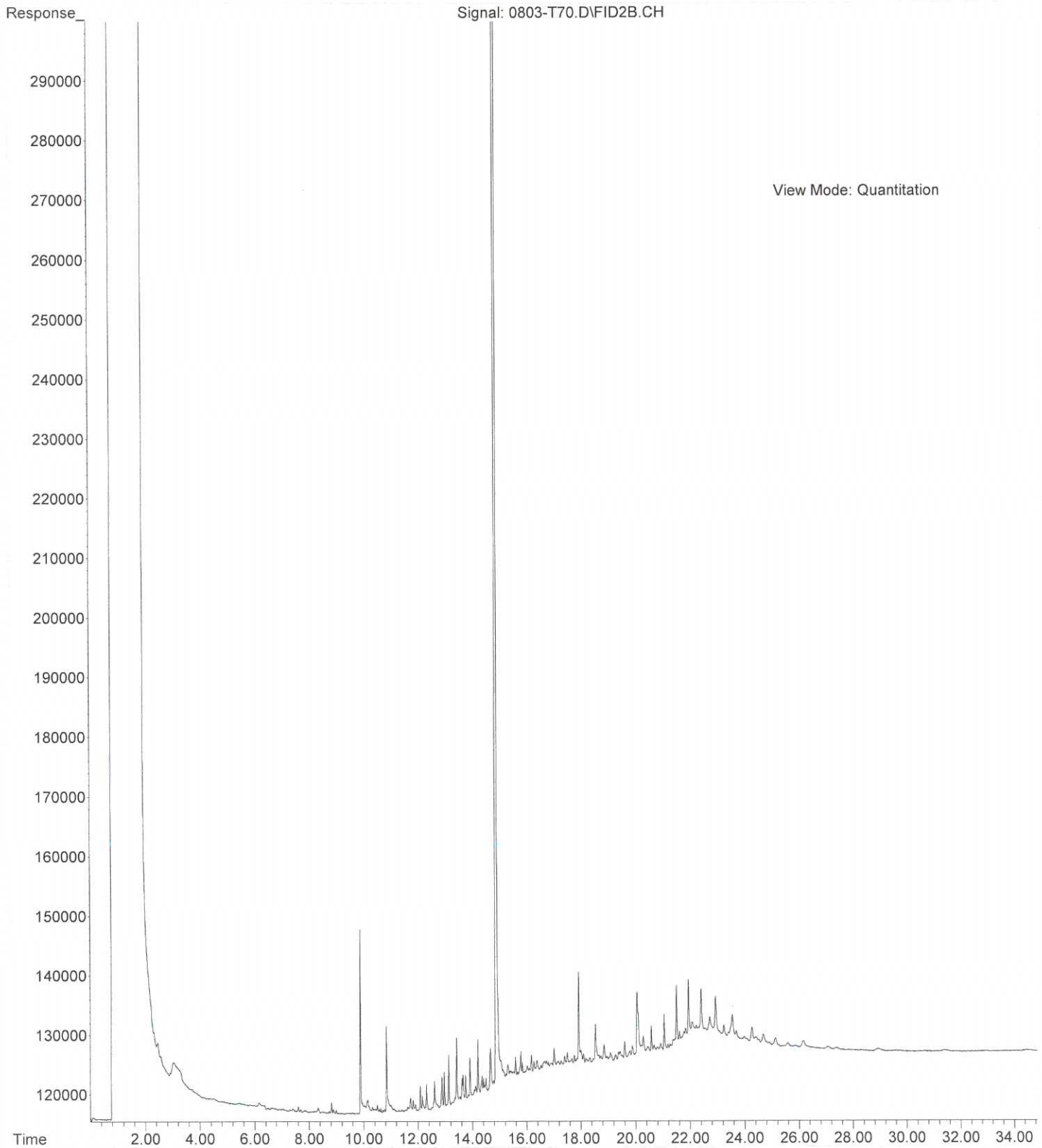
O Added 8/21/15. (STA)

Chromatograms with final report ☐

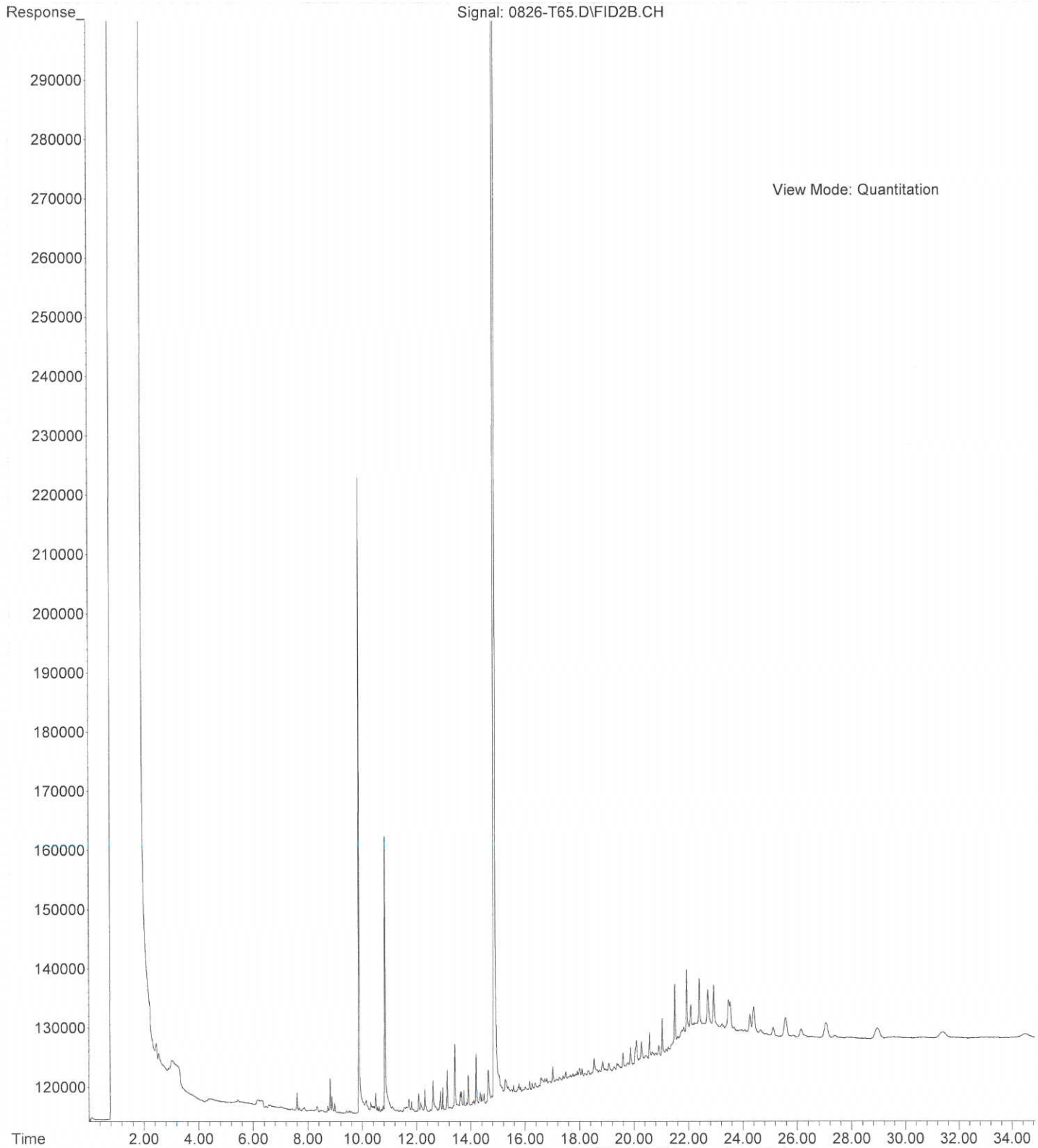
Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

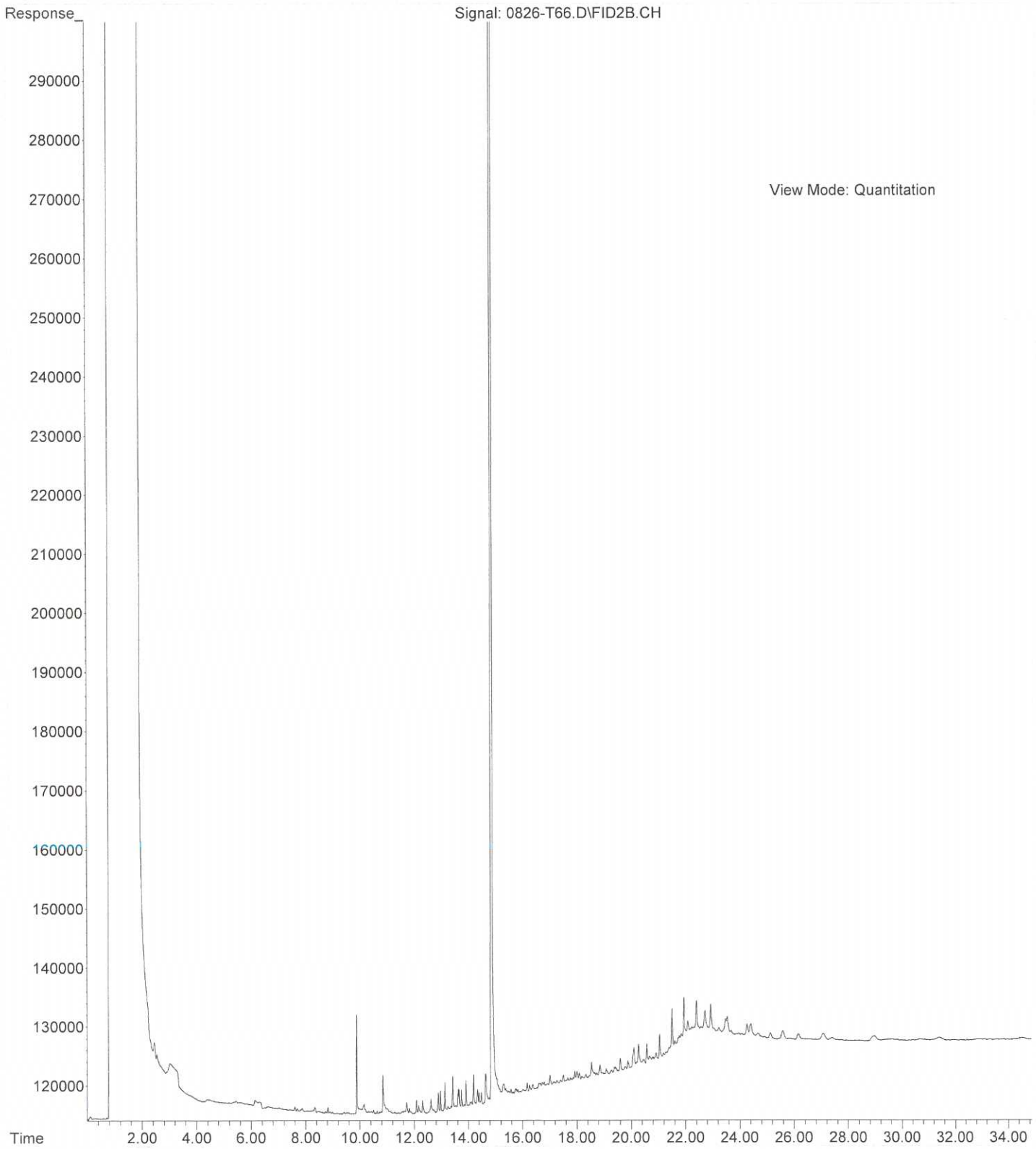
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Instrument : Teri
Sample Name: 08-201-01
Misc Info :
Vial Number: 70



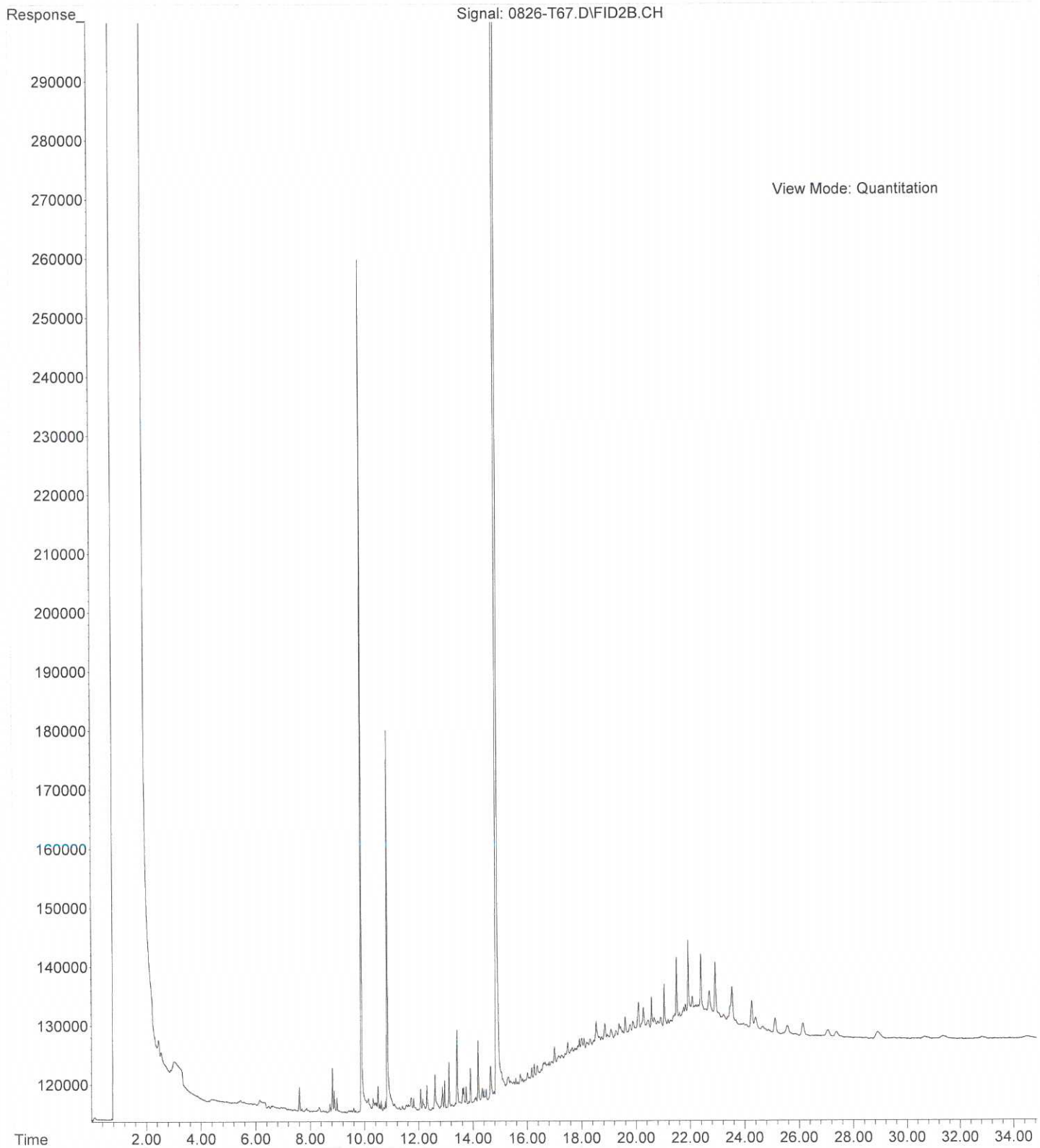
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Instrument : Teri
Sample Name: 08-201-02
Misc Info :
Vial Number: 65



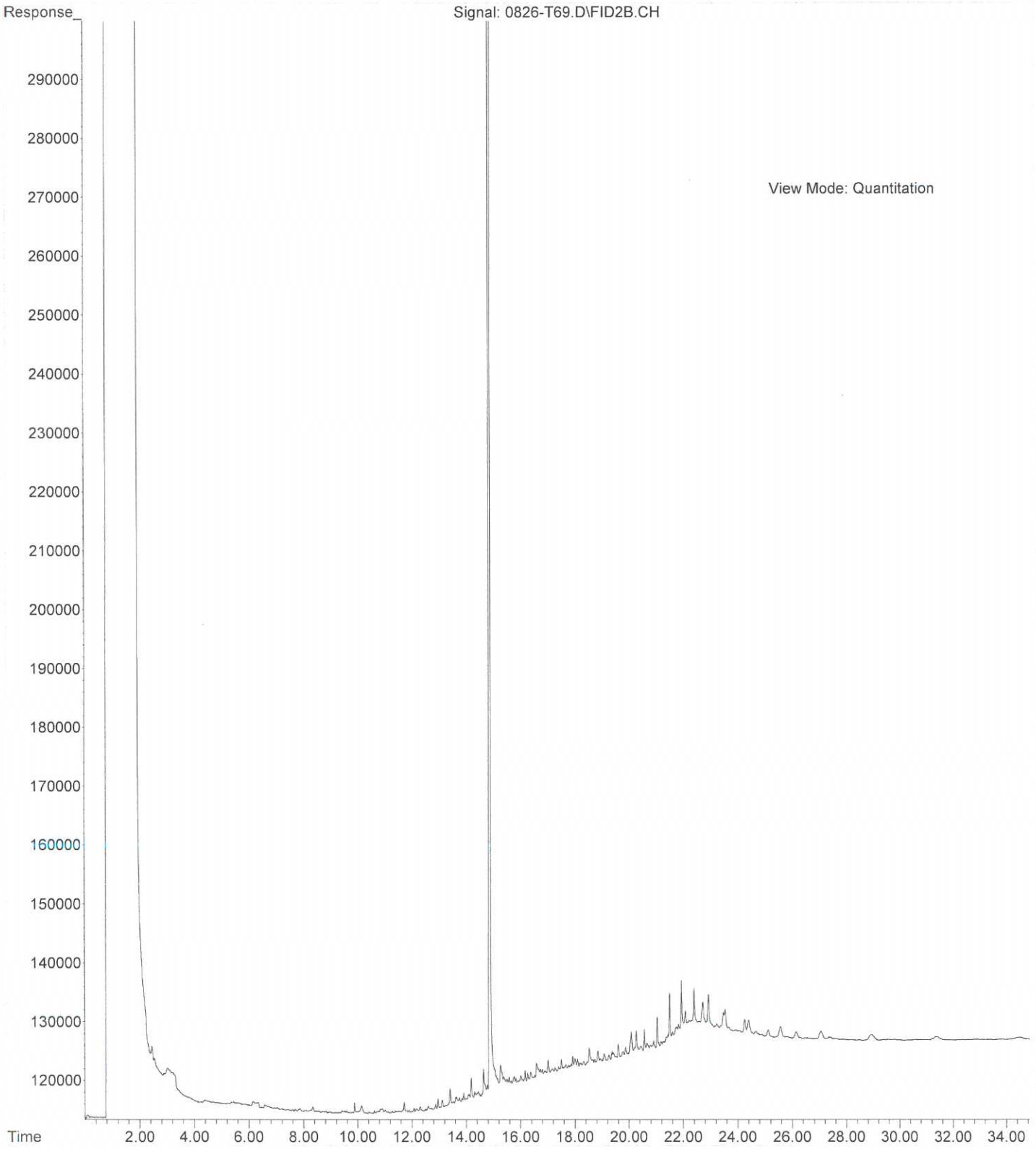
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Instrument : Teri
Sample Name: 08-201-03
Misc Info :
Vial Number: 66



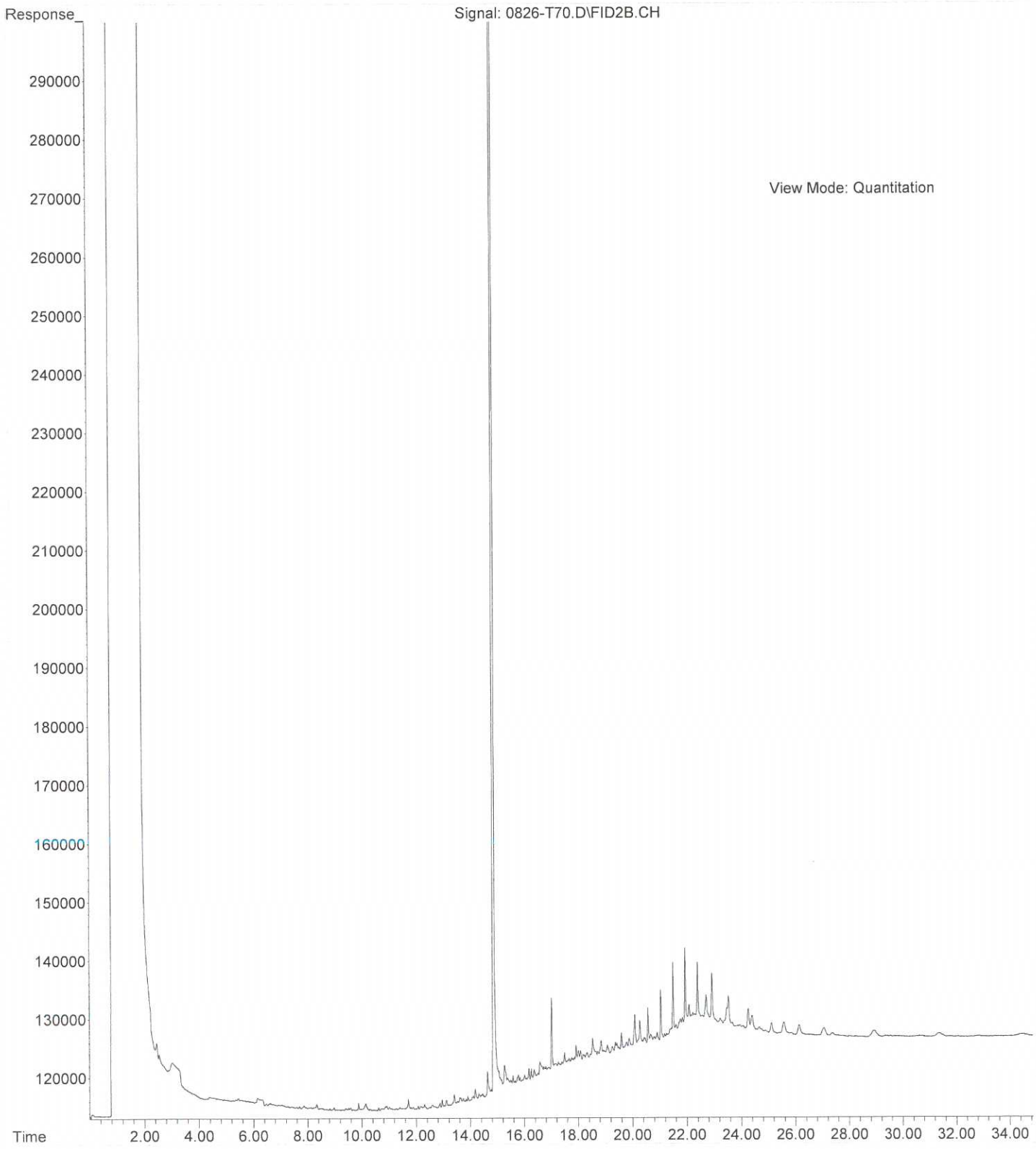
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Instrument : Teri
Sample Name: 08-201-04
Misc Info :
Vial Number: 67



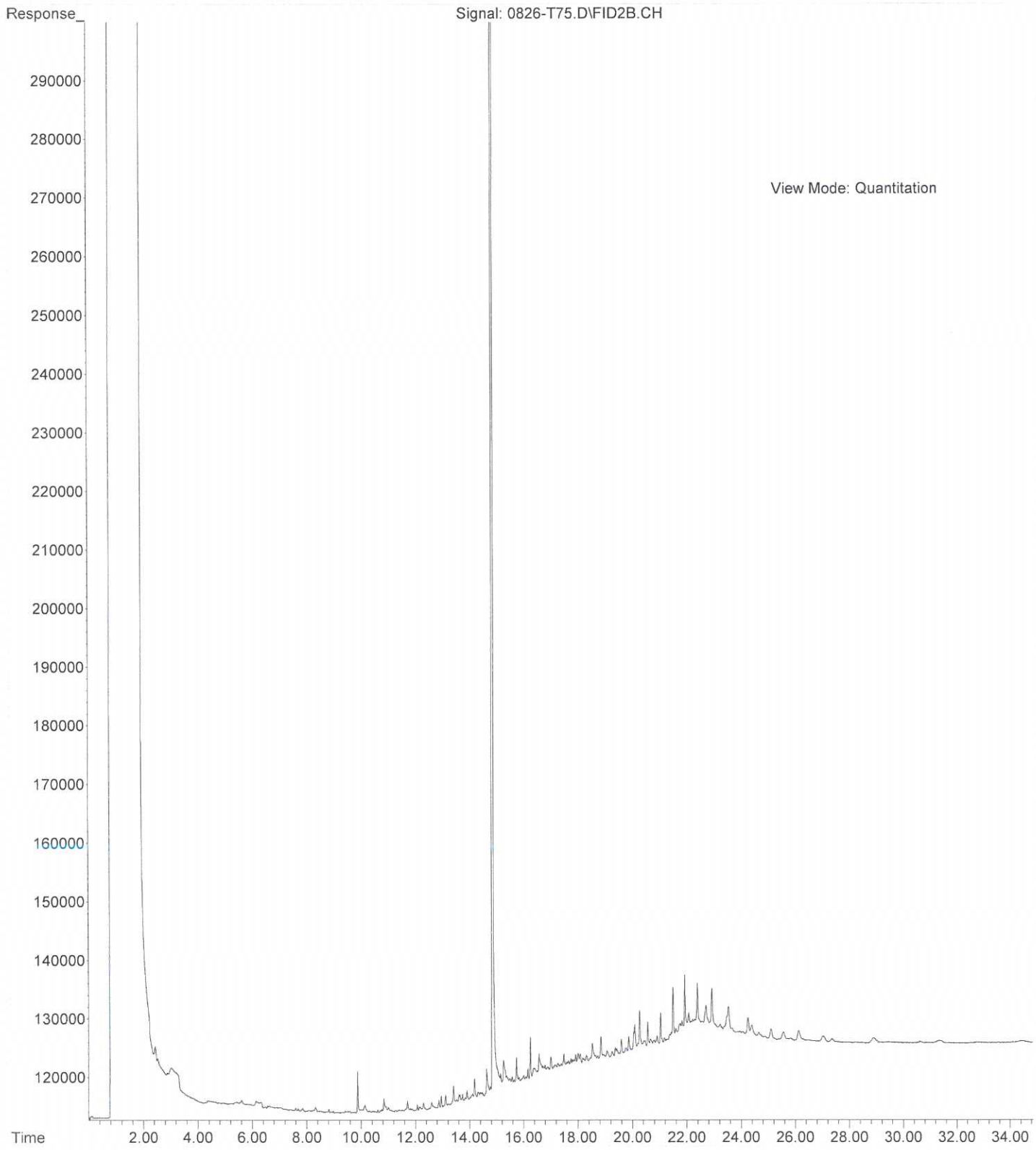
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Instrument : Teri
Sample Name: 08-201-05
Misc Info :
Vial Number: 69



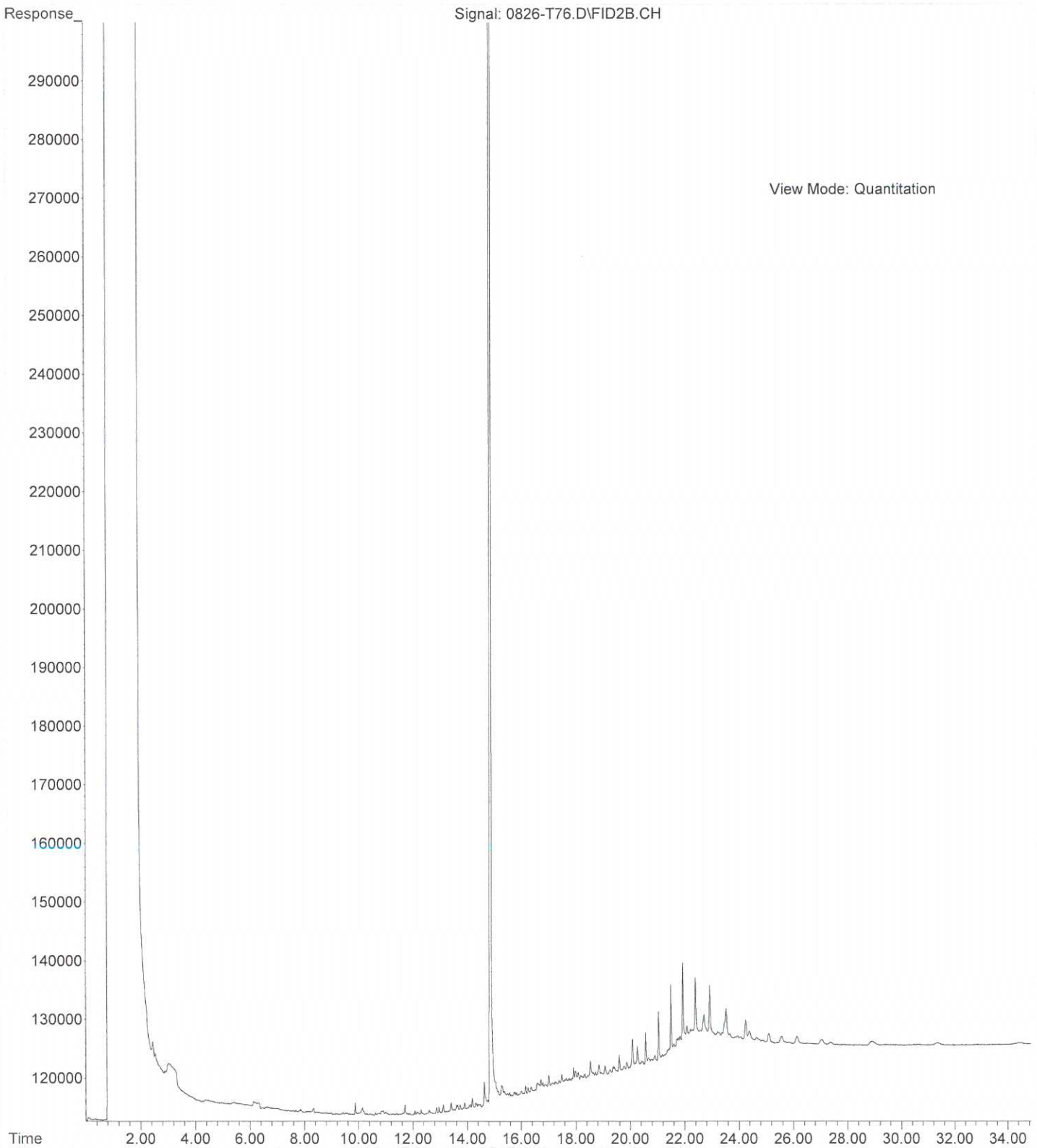
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Operator : ZT
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Instrument : Teri
Sample Name: 08-201-06
Misc Info :
Vial Number: 70



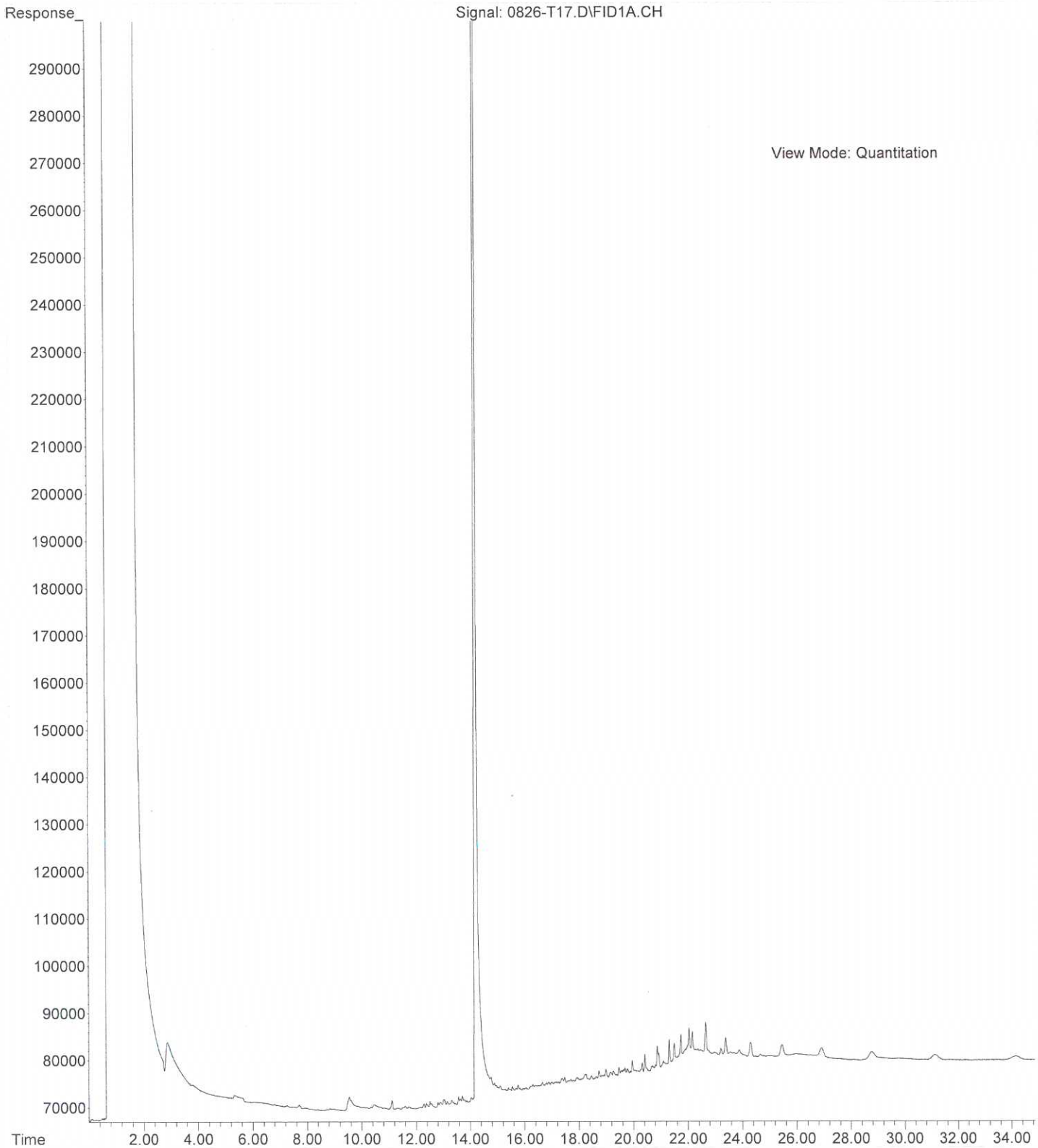
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Instrument : Teri
Sample Name: 08-201-07
Misc Info :
Vial Number: 75



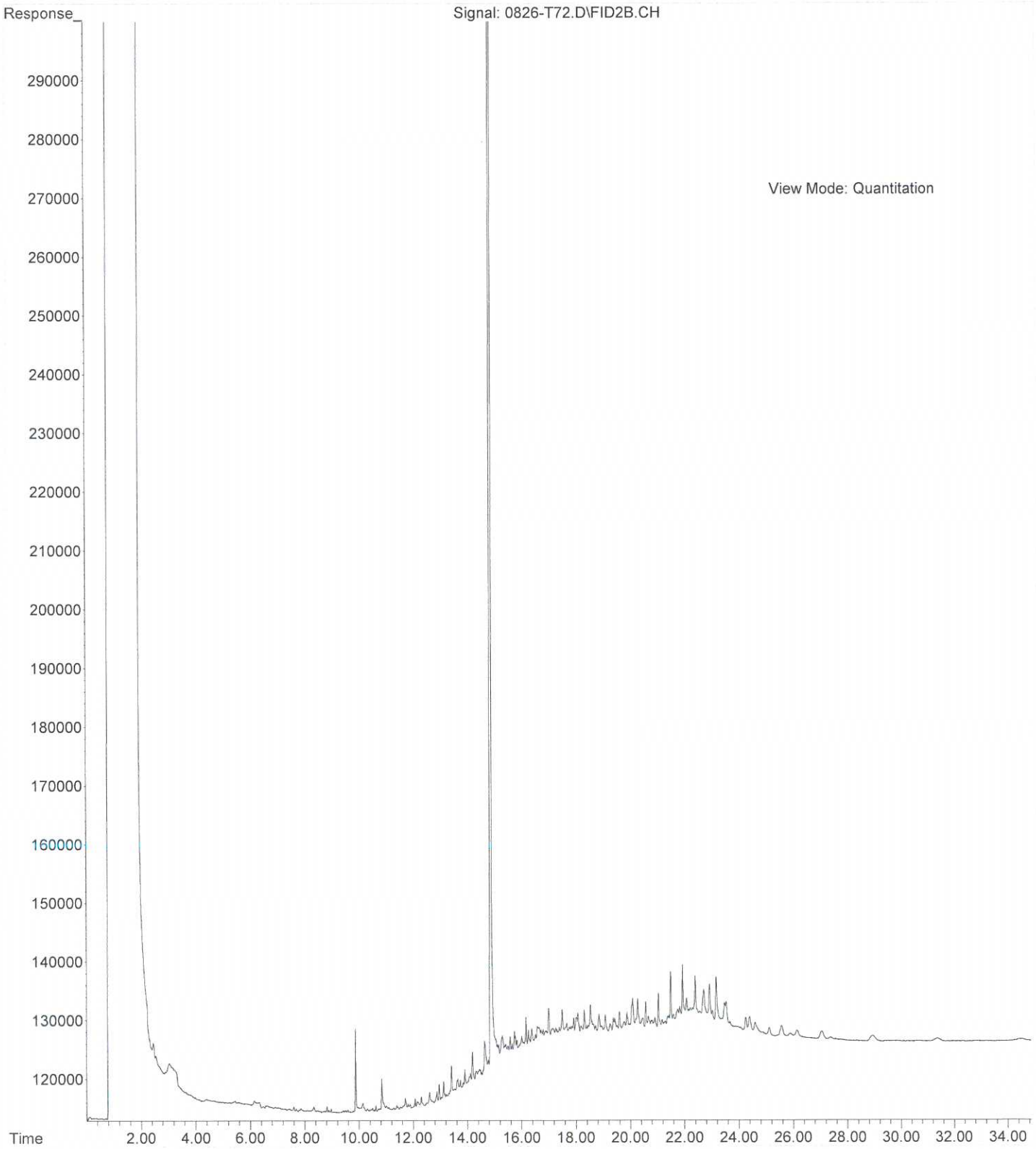
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Instrument : Teri
Sample Name: 08-201-08
Misc Info :
Vial Number: 76



File :X:\DIESELS\TERI\DATA\T150826\0826-T17.D
Operator : ZT
Acquired : 26 Aug 2015 23:14 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-201-09
Misc Info :
Vial Number: 17



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Operator : ZT
Acquired : 27 Aug 2015 2:50 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-201-10
Misc Info :
Vial Number: 72



OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 27, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-217

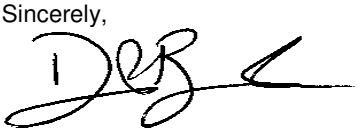
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 21, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

Case Narrative

Samples were collected on August 20, 2015 and received by the laboratory on August 21, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
MASSEX-11-15.0	08-217-01	Soil	8-20-15	8-21-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-11-15.0**					
Laboratory ID:	08-217-01					
Diesel Range Organics	**ND**	29	NWTPH-Dx	8-25-15	8-25-15	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*100*	*50-150*				

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and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

cPAHs EPA 8270D/SIM

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**MASSEX-11-15.0**					
Laboratory ID:	08-217-01					
Benzo[a]anthracene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0076	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*64*	*32 - 114*				
Pyrene-d10	*66*	*33 - 121*				
Terphenyl-d14	*74*	*31 - 116*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-25-15	8-25-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*116*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-230-01										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*88*	*94*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

cPAHs EPA 8270D/SIM
METHOD BLANK QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Laboratory ID:	MB0824S1					
Benzo[a]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Chrysene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[b]fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo(j,k)fluoranthene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Benzo[a]pyrene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Indeno(1,2,3-c,d)pyrene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Dibenz[a,h]anthracene	**ND**	0.0067	EPA 8270D/SIM	8-24-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
2-Fluorobiphenyl	*80*	*32 - 114*				
Pyrene-d10	*86*	*33 - 121*				
Terphenyl-d14	*94*	*31 - 116*				

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Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

cPAHs EPA 8270D/SIM
MS/MSD QUALITY CONTROL

Matrix: Soil
Units: mg/Kg

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
MATRIX SPIKES											
Laboratory ID:	08-201-02										
	MS	MSD	MS	MSD		MS	MSD				
Naphthalene	**0.0625**	**0.0608**	0.0833	0.0833	ND	75	73	44 - 107	3	29	
Acenaphthylene	**0.0667**	**0.0662**	0.0833	0.0833	ND	80	79	44 - 121	1	27	
Acenaphthene	**0.0666**	**0.0659**	0.0833	0.0833	ND	80	79	47 - 109	1	26	
Fluorene	**0.0710**	**0.0686**	0.0833	0.0833	ND	85	82	49 - 115	3	28	
Phenanthrene	**0.0645**	**0.0630**	0.0833	0.0833	ND	77	76	45 - 114	2	26	
Anthracene	**0.104**	**0.102**	0.0833	0.0833	ND	125	122	43 - 140	2	27	
Fluoranthene	**0.0642**	**0.0627**	0.0833	0.0833	ND	77	75	44 - 126	2	27	
Pyrene	**0.0684**	**0.0663**	0.0833	0.0833	ND	82	80	43 - 125	3	27	
Benzo[a]anthracene	**0.0810**	**0.0787**	0.0833	0.0833	ND	97	94	42 - 134	3	27	
Chrysene	**0.0609**	**0.0596**	0.0833	0.0833	ND	73	72	45 - 114	2	27	
Benzo[b]fluoranthene	**0.0721**	**0.0694**	0.0833	0.0833	ND	87	83	38 - 131	4	33	
Benzo(j,k)fluoranthene	**0.0647**	**0.0636**	0.0833	0.0833	ND	78	76	44 - 114	2	34	
Benzo[a]pyrene	**0.0735**	**0.0721**	0.0833	0.0833	ND	88	87	40 - 136	2	29	
Indeno(1,2,3-c,d)pyrene	**0.0708**	**0.0709**	0.0833	0.0833	ND	85	85	45 - 126	0	30	
Dibenz[a,h]anthracene	**0.0667**	**0.0651**	0.0833	0.0833	ND	80	78	46 - 121	2	28	
Benzo[g,h,i]perylene	**0.0680**	**0.0664**	0.0833	0.0833	ND	82	80	43 - 120	2	31	
Surrogate:											
2-Fluorobiphenyl						*75*	*75*	*32 - 114*			
Pyrene-d10						*76*	*74*	*33 - 121*			
Terphenyl-d14						*87*	*85*	*31 - 116*			

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Date of Report: August 27, 2015
Samples Submitted: August 21, 2015
Laboratory Reference: 1508-217
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-24-15

Client ID	Lab ID	% Moisture
MASSEX-11-15.0	08-217-01	12

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-217

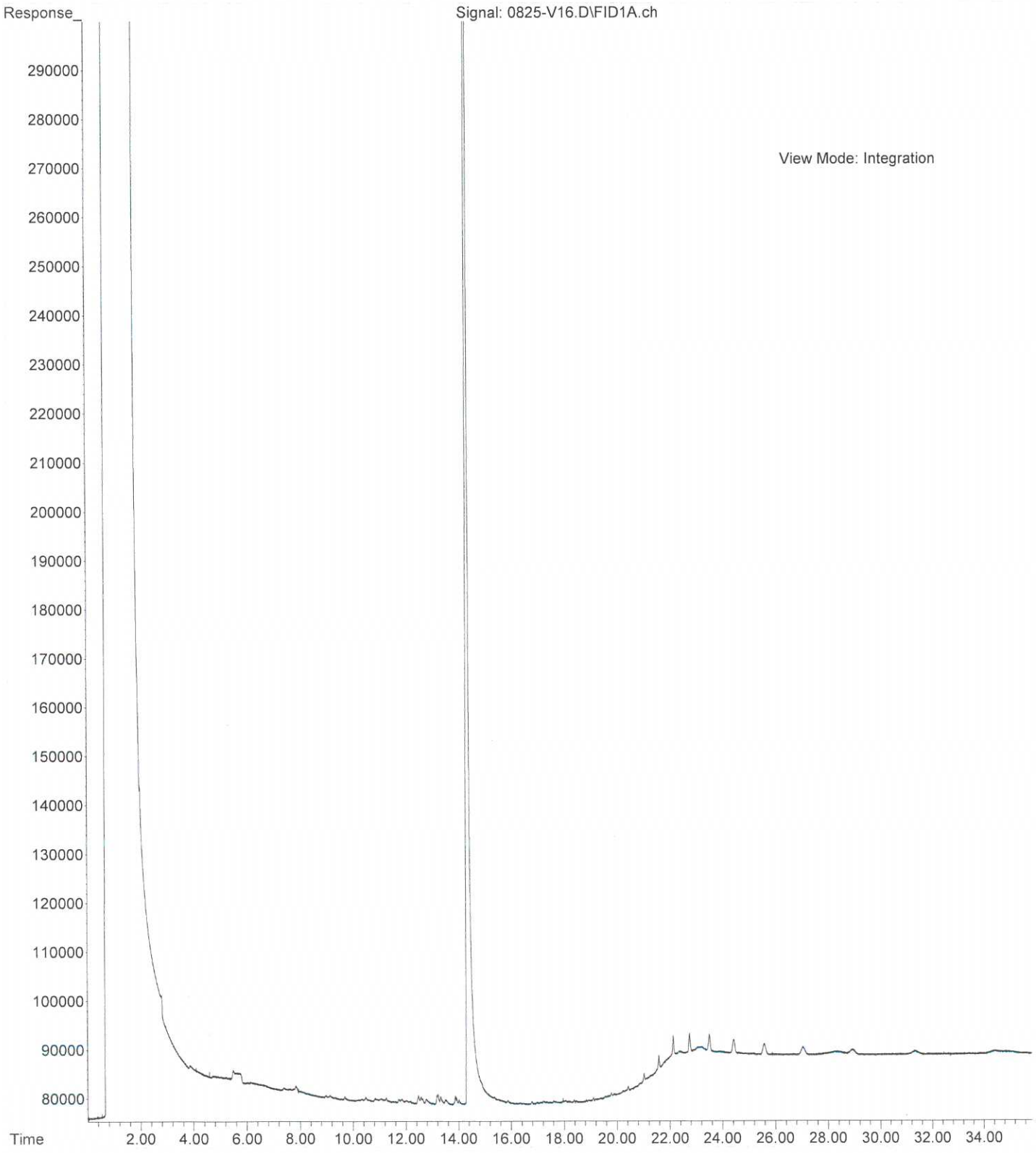
Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	cPAH only					% Moisture
1	MASSEX-11-15.0	8/20/15	1420	S	1				X													X					X

	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GEI	8/21/15	0840	
Received		OSE	8/21/15	0840	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

20 °C

File :X:\DIESELS\VIGO\DATA\V150825\0825-V16.D
Operator :
Acquired : 25 Aug 2015 21:33 using AcqMethod V150507F.M
Instrument : Vigo
Sample Name: 08-217-01
Misc Info :
Vial Number: 16



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

June 17, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-0
Laboratory Reference No. 1506-134

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on June 12, 2015.

Please note that this is a *revised* report, and replaces the original due to revisions of the sample identifications.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

Case Narrative

Samples were collected on June 11, 2015 and received by the laboratory on June 12, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST3-N-3.0	06-134-01	Soil	6-11-15	6-12-15	
UST3-S-3.0	06-134-02	Soil	6-11-15	6-12-15	
UST3-B-7.0	06-134-03	Soil	6-11-15	6-12-15	
UST3-FL-2.0	06-134-04	Soil	6-11-15	6-12-15	

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Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST3-B-7.0**					
Laboratory ID:	06-134-03					
Diesel Fuel #2	**2300**	29	NWTPH-Dx	6-12-15	6-12-15	
Lube Oil	**1400**	58	NWTPH-Dx	6-12-15	6-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*96*	*50-150*				

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Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST3-N-3.0**					
Laboratory ID:	06-134-01					
Diesel Range Organics	**ND**	28	NWTPH-Dx	6-12-15	6-12-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	6-12-15	6-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*89*	*50-150*				
Client ID:	**UST3-S-3.0**					
Laboratory ID:	06-134-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	6-12-15	6-12-15	
Lube Oil Range Organics	**ND**	57	NWTPH-Dx	6-12-15	6-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*90*	*50-150*				
Client ID:	**UST3-FL-2.0**					
Laboratory ID:	06-134-04					
Diesel Range Organics	**ND**	28	NWTPH-Dx	6-12-15	6-12-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	6-12-15	6-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*87*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0612S2					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-12-15	6-12-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-12-15	6-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*101*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-130-26										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*79*	*74*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0612S3					
Diesel Range Organics	**ND**	25	NWTPH-Dx	6-12-15	6-12-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	6-12-15	6-12-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*92*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	06-124-01										
	ORIG	DUP									
Diesel Fuel #2	**5600**	**5390**	NA	NA		NA		NA	4	NA	
Lube Oil	**1520**	**1490**	NA	NA		NA		NA	2	NA	
Surrogate:											
o-Terphenyl						*92*	*90*	*50-150*			

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Date of Report: June 17, 2015
Samples Submitted: June 12, 2015
Laboratory Reference: 1506-134
Project: 21138-001-0

% MOISTURE

Date Analyzed: 6-12&16-15

Client ID	Lab ID	% Moisture
UST3-N-3.0	06-134-01	11
UST3-S-3.0	06-134-02	12
UST3-B-7.0	06-134-03	14
UST3-FL-2.0	06-134-04	10

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

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C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

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L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 06-134

Company: GeoEngineers
Project Number: 21138-001-0
Project Name: 9th and Lenora Project
Project Manager: Fasih Khan
Sampled by: Fasih Khan

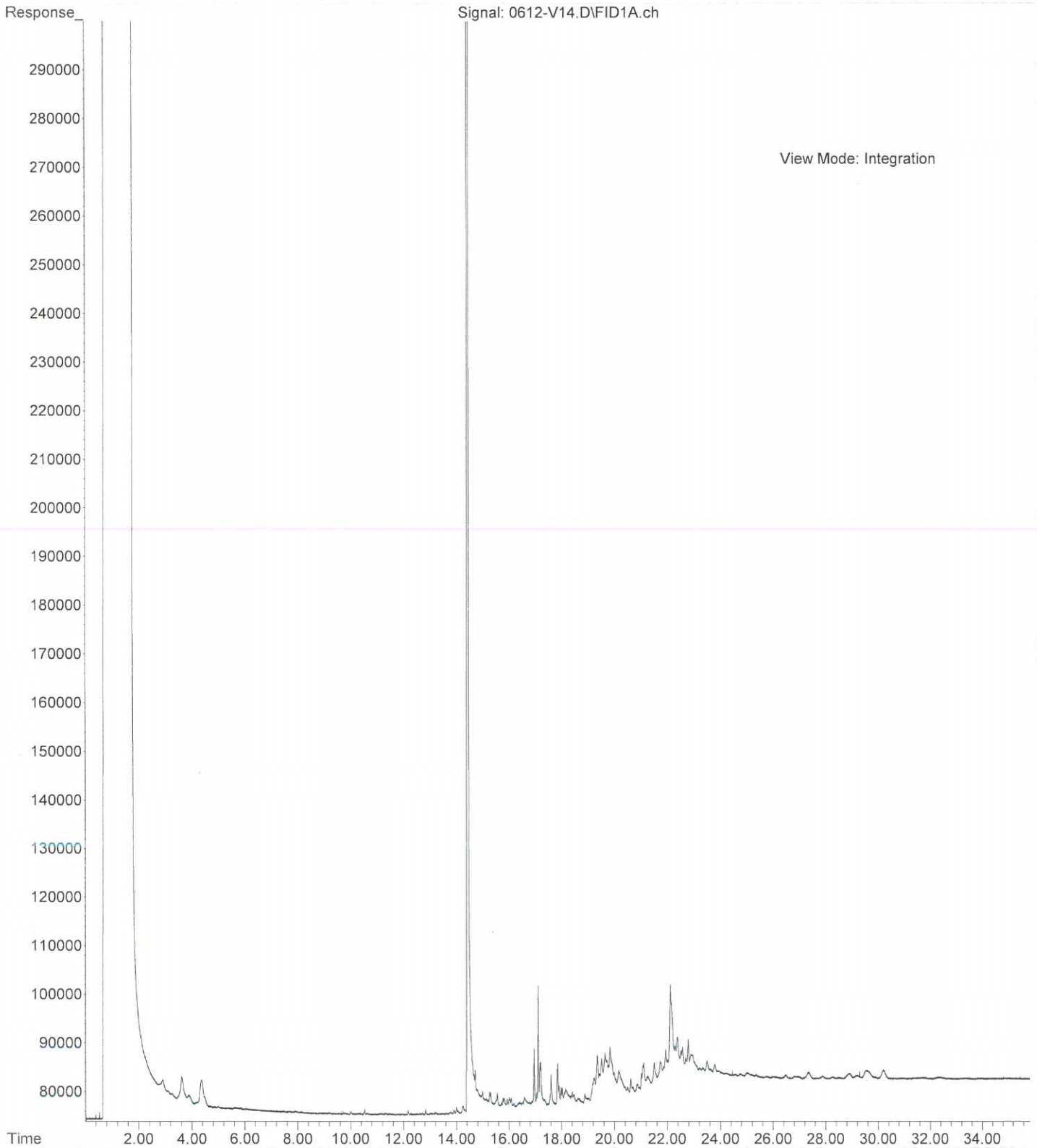
Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☐ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A		EDD	5 DAY TAT	SAME DAY		% Moisture
1	UST3-N-3.0	6/11/15	1400	S	2				X														X	X			X
2	UST3-S-3.0		1420						X														X	X			
3	UST3-B-7.0		1430						X																X		
4	UST3-FL-2.0		1500						X															X			

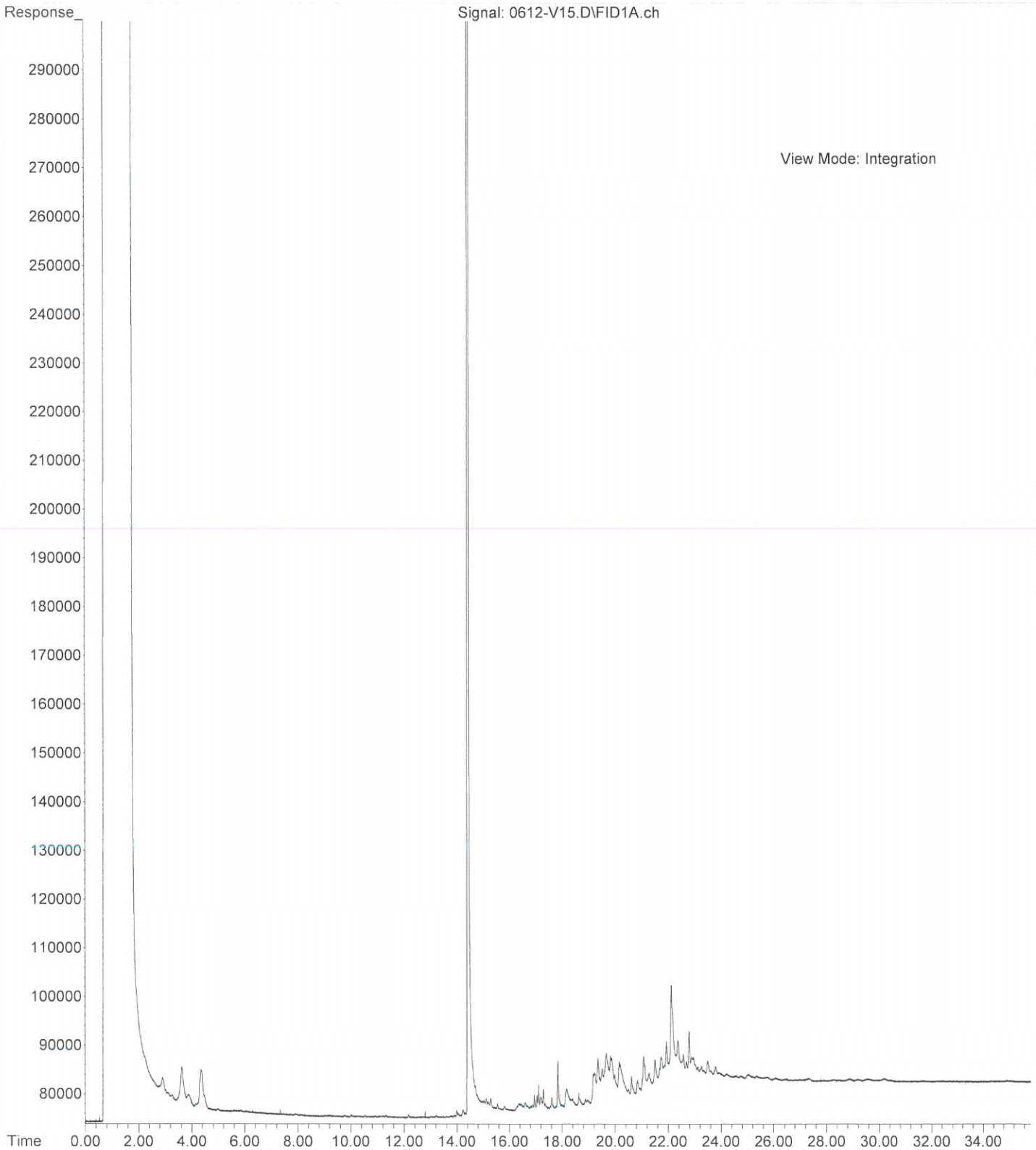
	Signature	Company	Date	Time	Comments/Special Instructions
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Received		GEE	6/12/15	1050	AL Changed UST2 to UST3 6/18/15
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

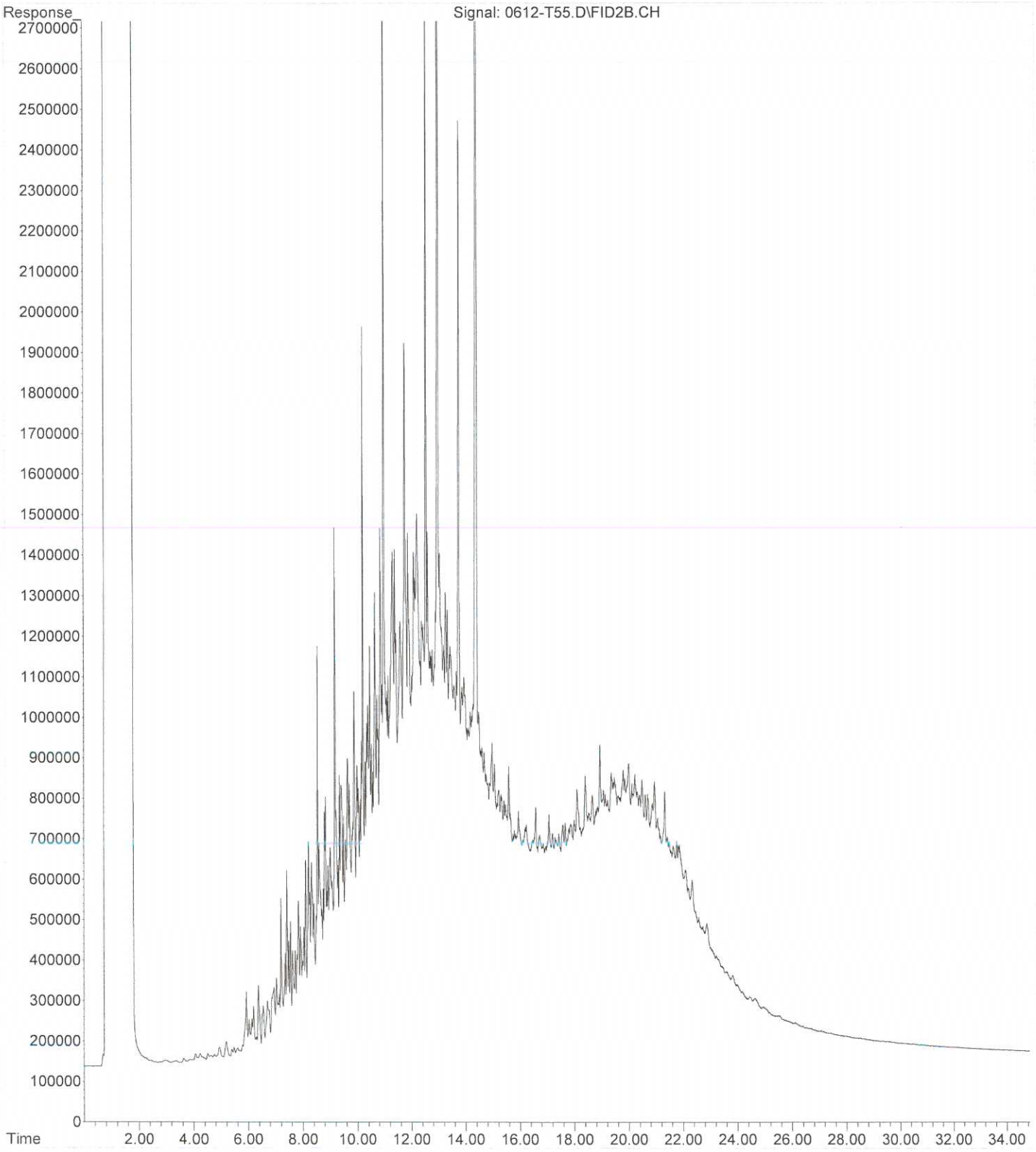
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Operator :
Acquired : 12 Jun 2015 19:05 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 06-134-01
Misc Info :
Vial Number: 14



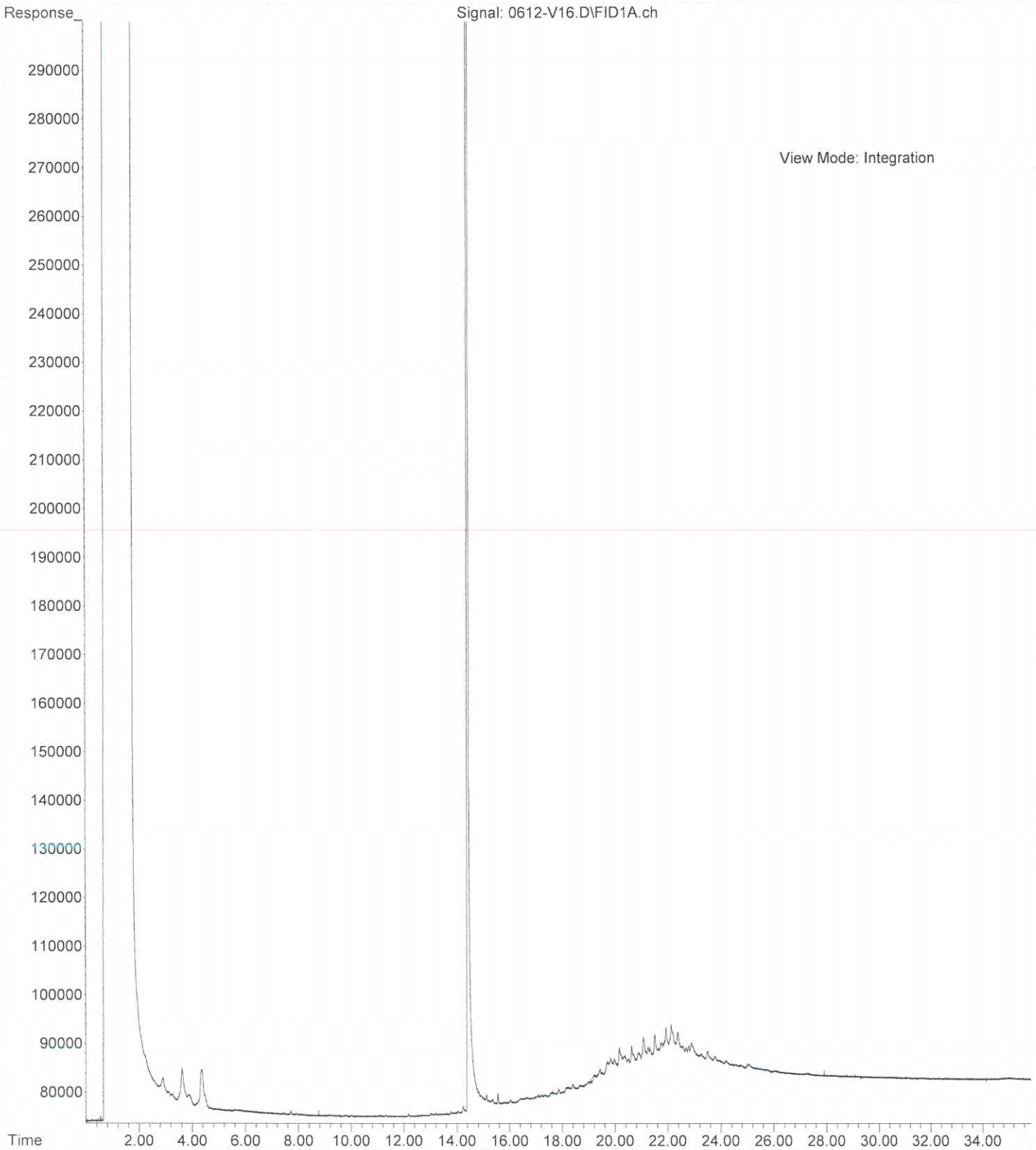
File :X:\DIESELS\VIGO\DATA\V150612\0612-V15.D
Operator :
Acquired : 12 Jun 2015 19:47 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 06-134-02
Misc Info :
Vial Number: 15



File :C:\msdchem\1\DATA\T150612.SEC\0612-T55.D
Operator : ZT
Acquired : 12 Jun 2015 12:57 using AcqMethod T150310F.M
Instrument : Teri
Sample Name: 06-134-03
Misc Info :
Vial Number: 55



File :X:\DIESELS\VIGO\DATA\V150612\0612-V16.D
Operator :
Acquired : 12 Jun 2015 20:28 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 06-134-04
Misc Info :
Vial Number: 16



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 24, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1508-198

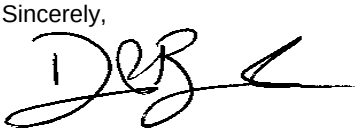
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on August 19, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 24, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-198
Project: 21138-001-03

Case Narrative

Samples were collected on August 3, 2015 and received by the laboratory on August 3, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: August 24, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-198
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
UST3EX-N-10.0	08-198-01	Soil	8-17-15	8-19-15	
UST3EX-S-10.0	08-198-02	Soil	8-17-15	8-19-15	
UST3EX-E-10.0	08-198-03	Soil	8-17-15	8-19-15	
UST3EX-W-10.0	08-198-04	Soil	8-17-15	8-19-15	
UST3EX-B-15.0	08-198-05	Soil	8-17-15	8-19-15	

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Date of Report: August 24, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-198
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**UST3EX-N-10.0**					
Laboratory ID:	08-198-01					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	62	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				
Client ID:	**UST3EX-S-10.0**					
Laboratory ID:	08-198-02					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	61	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*77*	*50-150*				
Client ID:	**UST3EX-E-10.0**					
Laboratory ID:	08-198-03					
Diesel Range Organics	**ND**	33	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	67	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*73*	*50-150*				
Client ID:	**UST3EX-W-10.0**					
Laboratory ID:	08-198-04					
Diesel Range Organics	**ND**	32	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*88*	*50-150*				
Client ID:	**UST3EX-B-15.0**					
Laboratory ID:	08-198-05					
Diesel Range Organics	**ND**	31	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	63	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*78*	*50-150*				

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Date of Report: August 24, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-198
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0820S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	8-20-15	8-20-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	8-20-15	8-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*111*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-203-04										
	ORIG	DUP									
Diesel Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Lube Oil	**71.9**	**65.6**	NA	NA		NA		NA	9	NA	
Surrogate:											
o-Terphenyl						*101*	*95*	*50-150*			

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Date of Report: August 24, 2015
Samples Submitted: August 19, 2015
Laboratory Reference: 1508-198
Project: 21138-001-03

% MOISTURE

Date Analyzed: 8-20-15

Client ID	Lab ID	% Moisture
UST3EX-N-10.0	08-198-01	19
UST3EX-S-10.0	08-198-02	19
UST3EX-E-10.0	08-198-03	25
UST3EX-W-10.0	08-198-04	21
UST3EX-B-15.0	08-198-05	20

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

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Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)

(Check One)

- ☐ Same Day
- ☐ 1 Day
- ☒ 2 Days
- ☐ 3 Days
- ☐ Standard (7 Days) (TPH analysis 5 Days)
- ☐ _____ (other)

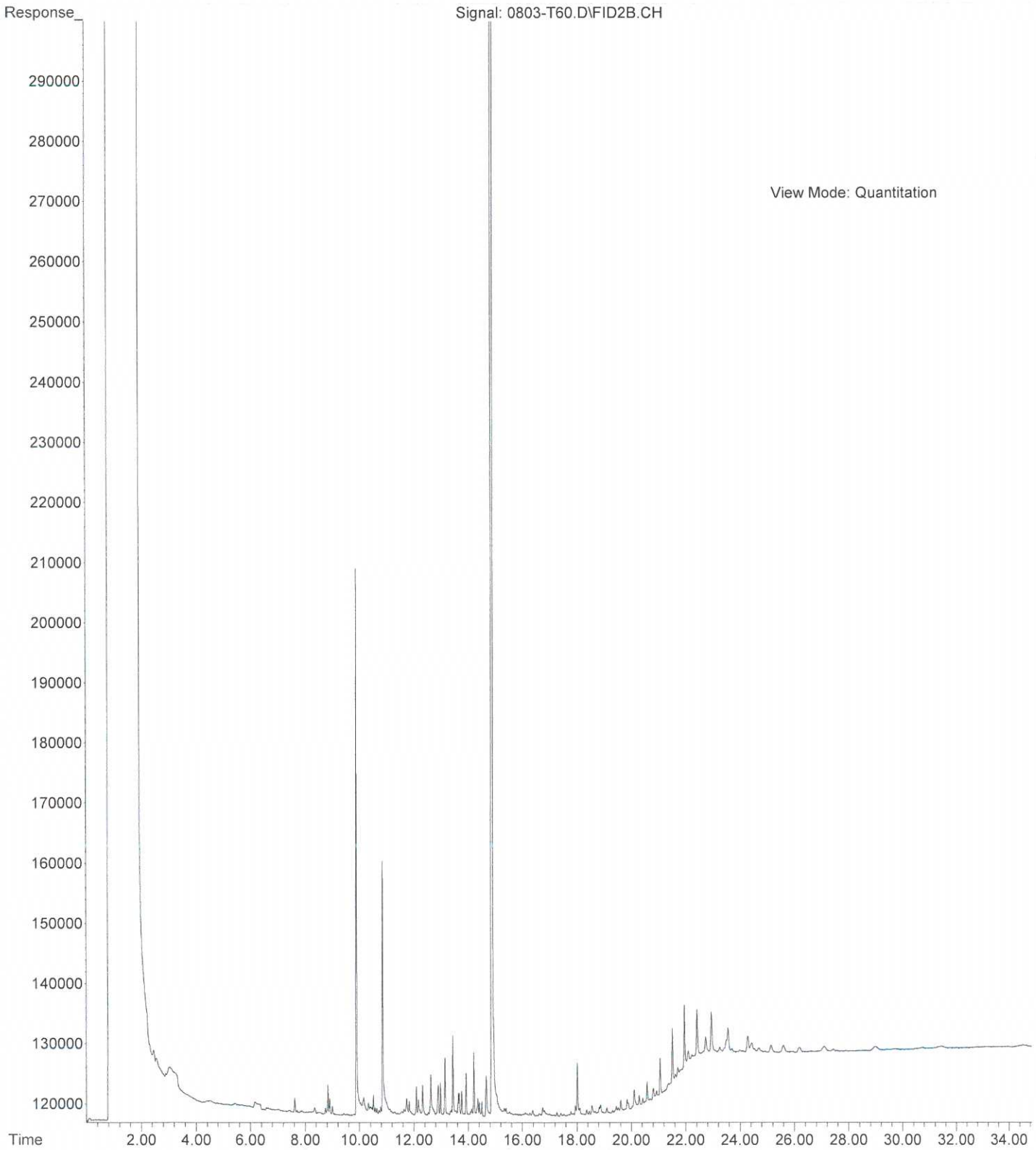
Laboratory Number: 08-198

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	UST3EX-N-X-10.0 DS	8/17/15	0930	S	1				X													K
2	UST3EX-S-Z-10.0 DS		0950						X													K
3	UST3EX-E-B-10.0 DS		1130						X													K
4	UST3EX-W-A-10.0 DS		1245						X													K
5	UST3EX-B-B-15.0 DS	↓	1350	↓	↓				X													K

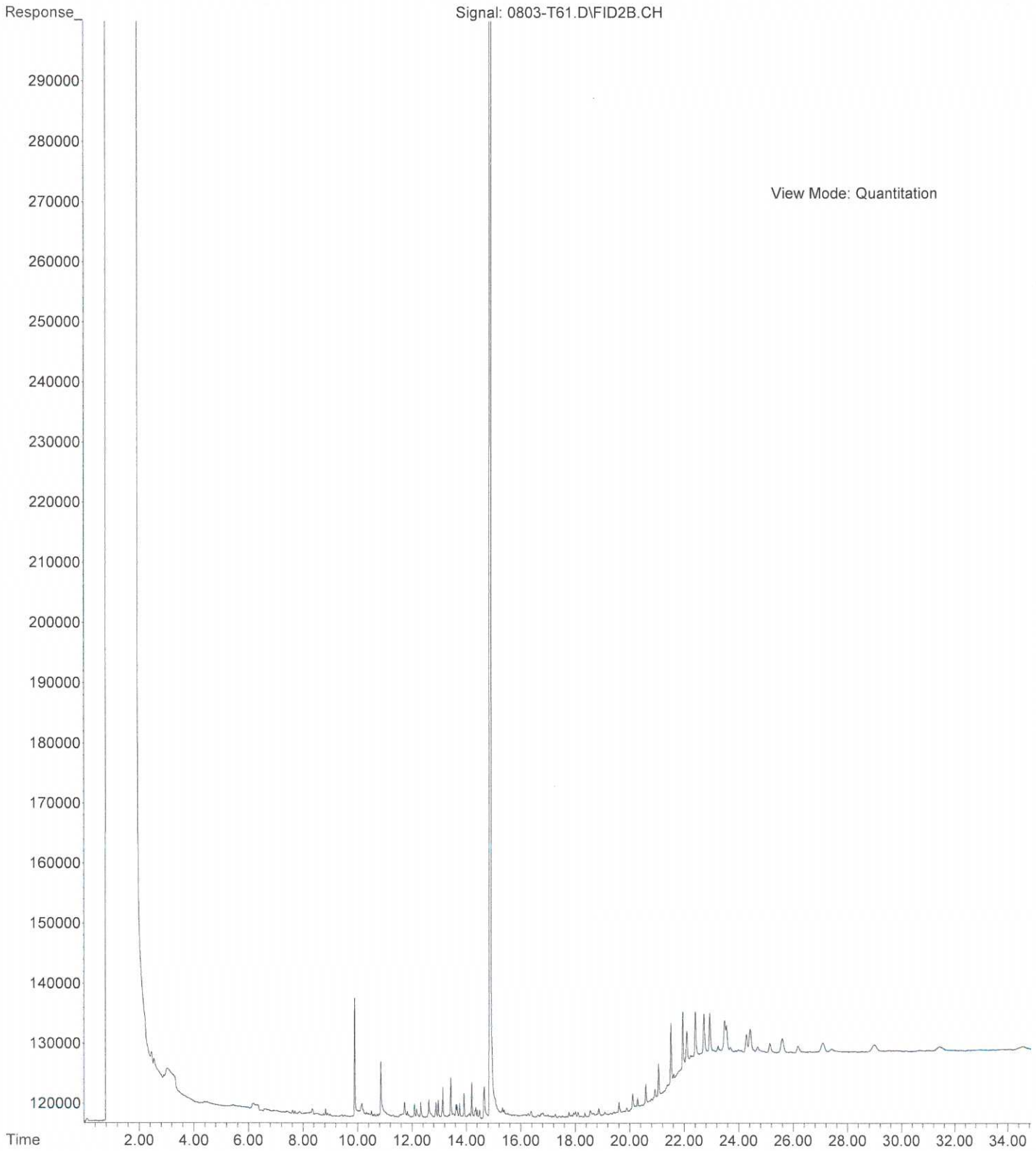
	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished		GED	8/19/15	1605	
Received		OSE	8/19/15	1605	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

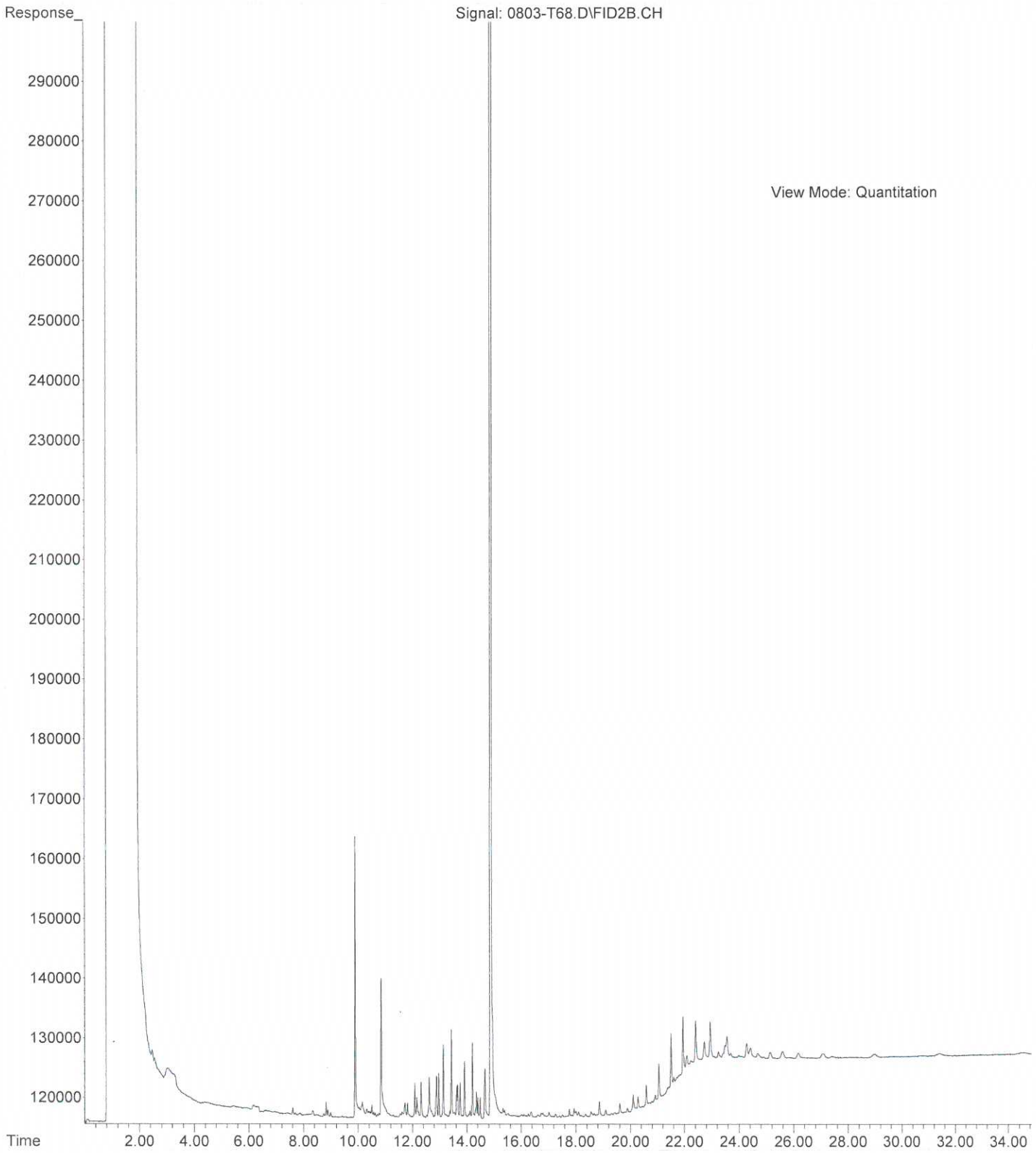
File :X:\DIESELS\TERI\DATA\T150820.SEC\0803-T60.D
Operator : ZT
Acquired : 20 Aug 2015 21:54 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-198-01
Misc Info :
Vial Number: 60



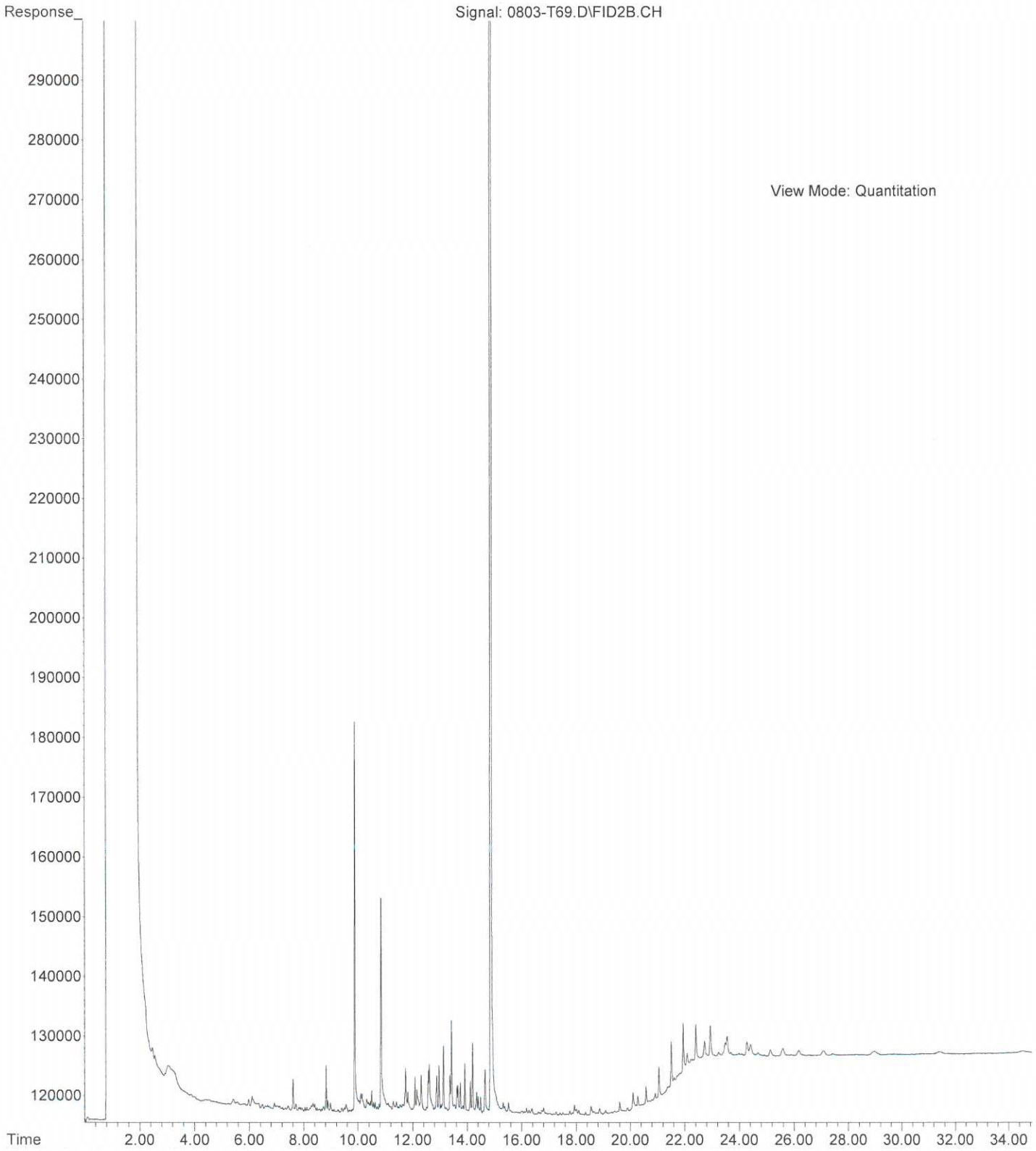
File : X:\DIESELS\TERI\DATA\T150820.SEC\0803-T61.D
Operator : ZT
Acquired : 20 Aug 2015 22:37 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-198-02
Misc Info :
Vial Number: 61



File :X:\DIESELS\TERI\DATA\T150820.SEC\0803-T68.D
Operator : ZT
Acquired : 21 Aug 2015 3:40 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-198-04
Misc Info :
Vial Number: 68



File :X:\DIESELS\TERI\DATA\T150820.SEC\0803-T69.D
Operator : ZT
Acquired : 21 Aug 2015 4:23 using AcqMethod T150713F.M
Instrument : Teri
Sample Name: 08-198-05
Misc Info :
Vial Number: 69



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 13, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1507-037

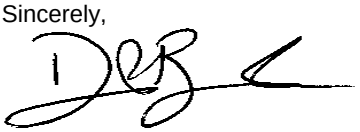
Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on July 7, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,



David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

Case Narrative

Samples were collected on July 6, 2015 and received by the laboratory on July 7, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

NWTPH Gx/BTEX Analysis

Per EPA Method 5035A, samples were received by the laboratory in pre-weighed 40 mL VOA vials within 48 hours of sample collection. They were stored in a freezer at between -7°C and -20°C until extraction or analysis.

Any other QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
DUCT-1-8.0	07-037-01	Soil	7-6-15	7-7-15	
DUCT-2-15.0	07-037-02	Soil	7-6-15	7-7-15	
DUCT-3-20.0	07-037-03	Soil	7-6-15	7-7-15	
EX-1-6.0	07-037-04	Soil	7-6-15	7-7-15	

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DUCT-1-8.0**					
Laboratory ID:	07-037-01					
Benzene	**ND**	0.020	EPA 8021B	7-9-15	7-9-15	
Toluene	**ND**	0.053	EPA 8021B	7-9-15	7-9-15	
Ethyl Benzene	**ND**	0.053	EPA 8021B	7-9-15	7-9-15	
m,p-Xylene	**ND**	0.053	EPA 8021B	7-9-15	7-9-15	
o-Xylene	**ND**	0.053	EPA 8021B	7-9-15	7-9-15	
Gasoline	**ND**	5.3	NWTPH-Gx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*98*	*68-123*				
Client ID:	**DUCT-2-15.0**					
Laboratory ID:	07-037-02					
Benzene	**ND**	0.020	EPA 8021B	7-9-15	7-9-15	
Toluene	**ND**	0.063	EPA 8021B	7-9-15	7-9-15	
Ethyl Benzene	**ND**	0.063	EPA 8021B	7-9-15	7-9-15	
m,p-Xylene	**ND**	0.063	EPA 8021B	7-9-15	7-9-15	
o-Xylene	**ND**	0.063	EPA 8021B	7-9-15	7-9-15	
Gasoline	**ND**	6.3	NWTPH-Gx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*96*	*68-123*				
Client ID:	**DUCT-3-20.0**					
Laboratory ID:	07-037-03					
Benzene	**ND**	0.020	EPA 8021B	7-9-15	7-9-15	
Toluene	**ND**	0.065	EPA 8021B	7-9-15	7-9-15	
Ethyl Benzene	**ND**	0.065	EPA 8021B	7-9-15	7-9-15	
m,p-Xylene	**ND**	0.065	EPA 8021B	7-9-15	7-9-15	
o-Xylene	**ND**	0.065	EPA 8021B	7-9-15	7-9-15	
Gasoline	**ND**	6.5	NWTPH-Gx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*68-123*				

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Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**EX-1-6.0**					
Laboratory ID:	07-037-04					
Benzene	**ND**	0.020	EPA 8021B	7-9-15	7-9-15	
Toluene	**ND**	0.051	EPA 8021B	7-9-15	7-9-15	
Ethyl Benzene	**ND**	0.051	EPA 8021B	7-9-15	7-9-15	
m,p-Xylene	**ND**	0.051	EPA 8021B	7-9-15	7-9-15	
o-Xylene	**ND**	0.051	EPA 8021B	7-9-15	7-9-15	
Gasoline	**ND**	5.1	NWTPH-Gx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*97*	*68-123*				

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Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

NWTPH-Dx

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**DUCT-1-8.0**					
Laboratory ID:	07-037-01					
Diesel Range Organics	**ND**	27	NWTPH-Dx	7-9-15	7-9-15	
Lube Oil Range Organics	**ND**	54	NWTPH-Dx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*80*	*50-150*				
Client ID:	**DUCT-2-15.0**					
Laboratory ID:	07-037-02					
Diesel Range Organics	**ND**	28	NWTPH-Dx	7-9-15	7-9-15	
Lube Oil Range Organics	**ND**	56	NWTPH-Dx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*91*	*50-150*				
Client ID:	**DUCT-3-20.0**					
Laboratory ID:	07-037-03					
Diesel Range Organics	**ND**	27	NWTPH-Dx	7-9-15	7-9-15	
Lube Oil Range Organics	**ND**	53	NWTPH-Dx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*84*	*50-150*				

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Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Soil
Units: mg/kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0709S2					
Benzene	**ND**	0.020	EPA 8021B	7-9-15	7-9-15	
Toluene	**ND**	0.050	EPA 8021B	7-9-15	7-9-15	
Ethyl Benzene	**ND**	0.050	EPA 8021B	7-9-15	7-9-15	
m,p-Xylene	**ND**	0.050	EPA 8021B	7-9-15	7-9-15	
o-Xylene	**ND**	0.050	EPA 8021B	7-9-15	7-9-15	
Gasoline	**ND**	5.0	NWTPH-Gx	7-9-15	7-9-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*68-123*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-037-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*98*	*93*	*68-123*			
SPIKE BLANKS											
Laboratory ID:	SB0709S1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**0.983**	**1.02**	1.00	1.00		**98**	**102**	75-117	4	13	
Toluene	**0.945**	**0.993**	1.00	1.00		**95**	**99**	78-118	5	12	
Ethyl Benzene	**0.946**	**0.978**	1.00	1.00		**95**	**98**	78-118	3	12	
m,p-Xylene	**0.945**	**0.985**	1.00	1.00		**95**	**99**	78-121	4	13	
o-Xylene	**0.945**	**0.974**	1.00	1.00		**95**	**97**	77-119	3	13	
Surrogate:											
Fluorobenzene						*90*	*94*	*68-123*			

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Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Soil
Units: mg/Kg (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0709S1					
Diesel Range Organics	**ND**	25	NWTPH-Dx	7-9-15	7-10-15	
Lube Oil Range Organics	**ND**	50	NWTPH-Dx	7-9-15	7-10-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*83*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery	Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE										
Laboratory ID:	07-037-01									
	ORIG	DUP								
Diesel Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Lube Oil Range	**ND**	**ND**	NA	NA		NA	NA	NA	NA	
Surrogate:										
o-Terphenyl						*80* *90*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 13, 2015
Samples Submitted: July 7, 2015
Laboratory Reference: 1507-037
Project: 21138-001-03

% MOISTURE

Date Analyzed: 7-9-15

Client ID	Lab ID	% Moisture
DUCT-1-8.0	07-037-01	7
DUCT-2-15.0	07-037-02	10
DUCT-3-20.0	07-037-03	6
EX-1-6.0	07-037-04	4

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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th AND LENORA PROJECT
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☒ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

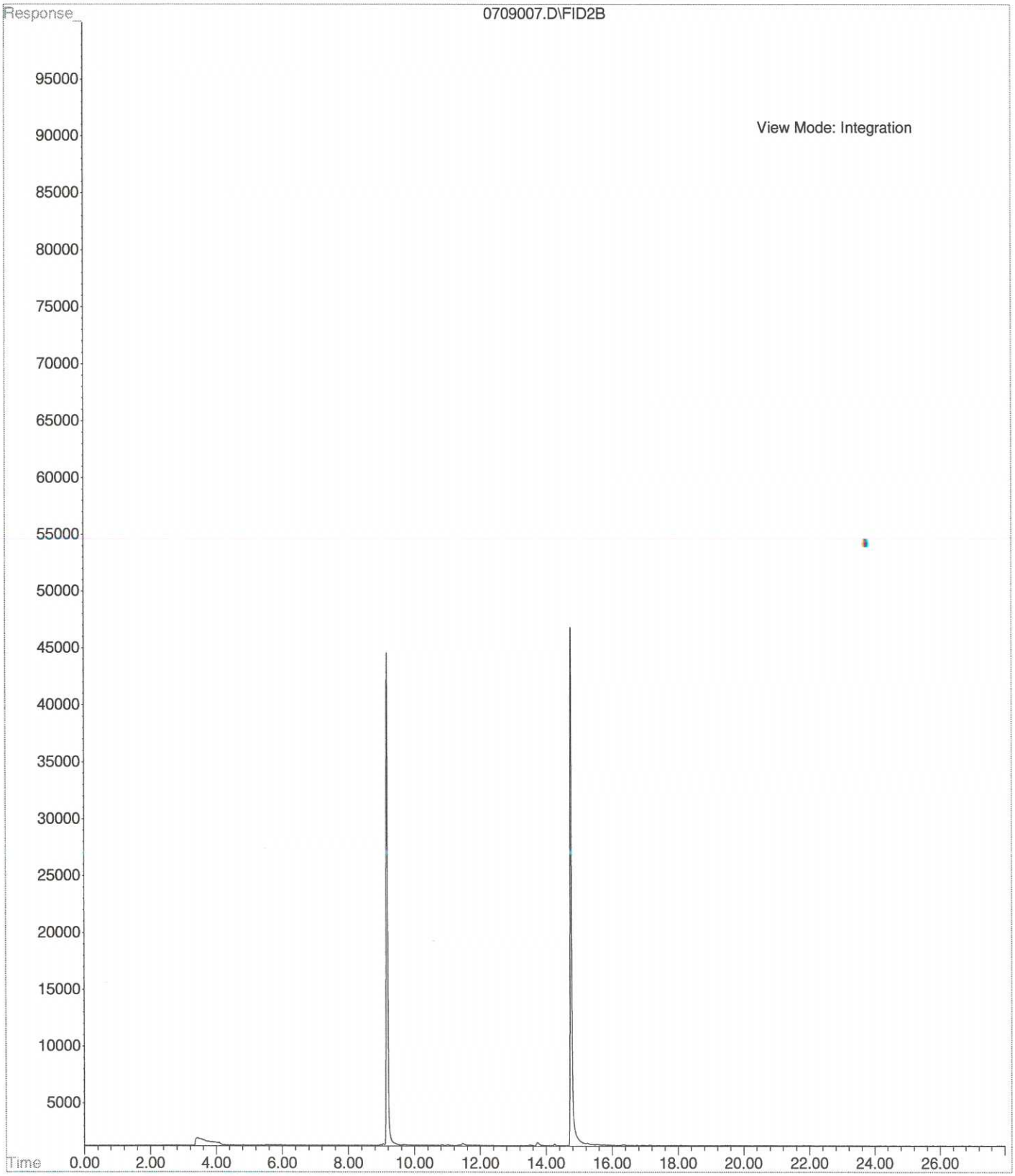
Laboratory Number: 07-037

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	% Moisture
1	DUCT-1-8.0	7/6/15	0830	S	2		⊗		⊗													⊗
2	DUCT-2-15.0	↓	0900	↓	↓		⊗		⊗													↓
3	DUCT-3-20.0		1130				⊗		⊗													
4	EX-1-6.0		1135				⊗															

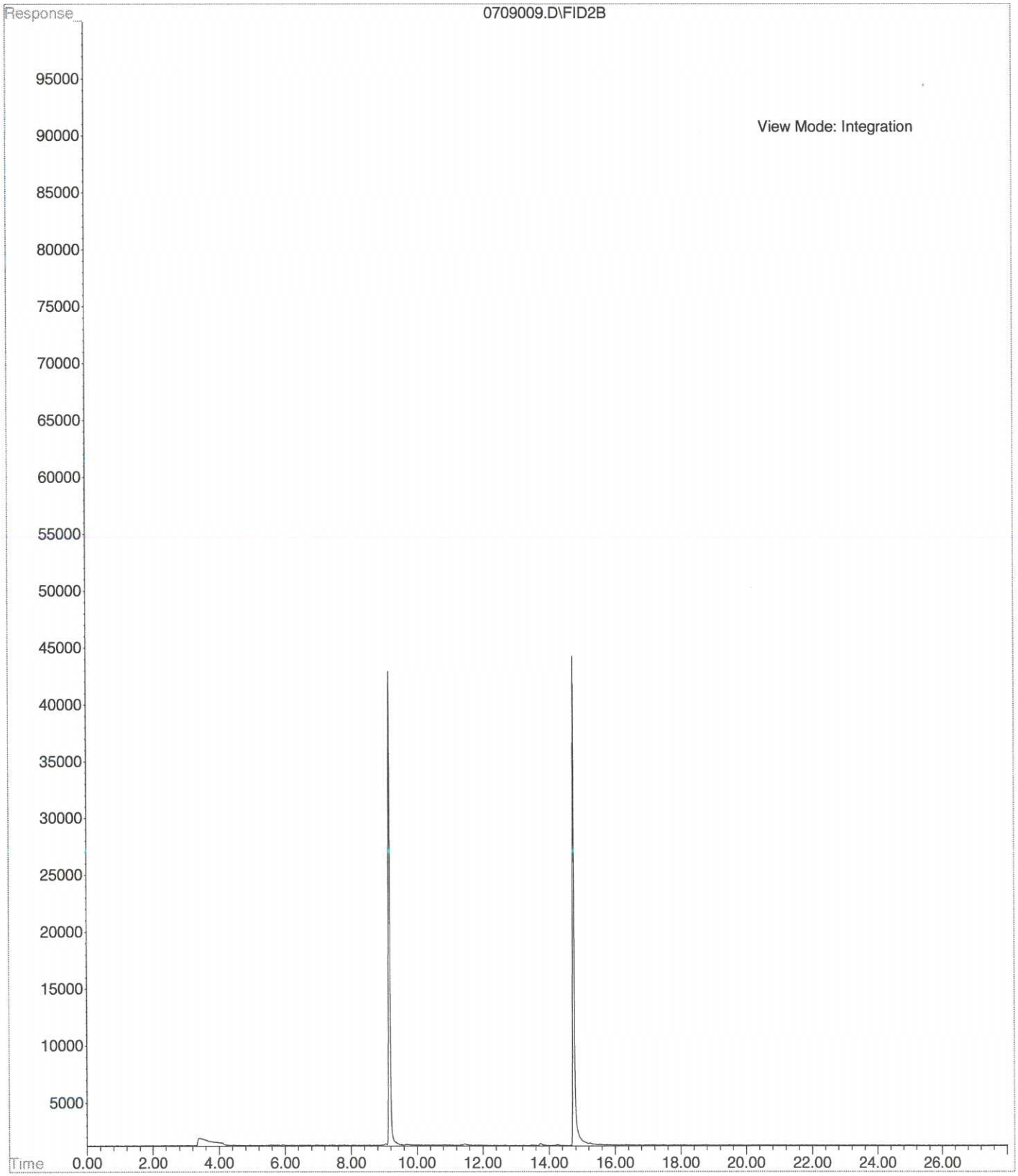
	Signature	Company	Date	Time	Comments/Special Instructions
Relinquished	[signature]	GEI	7/7/15	0830	
Received	[signature]	[signature]	7/7/15	0830	
Relinquished					
Received					
Relinquished					
Received					
Reviewed/Date		Reviewed/Date			Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐ Electronic Data Deliverables (EDDs) ☐ _____

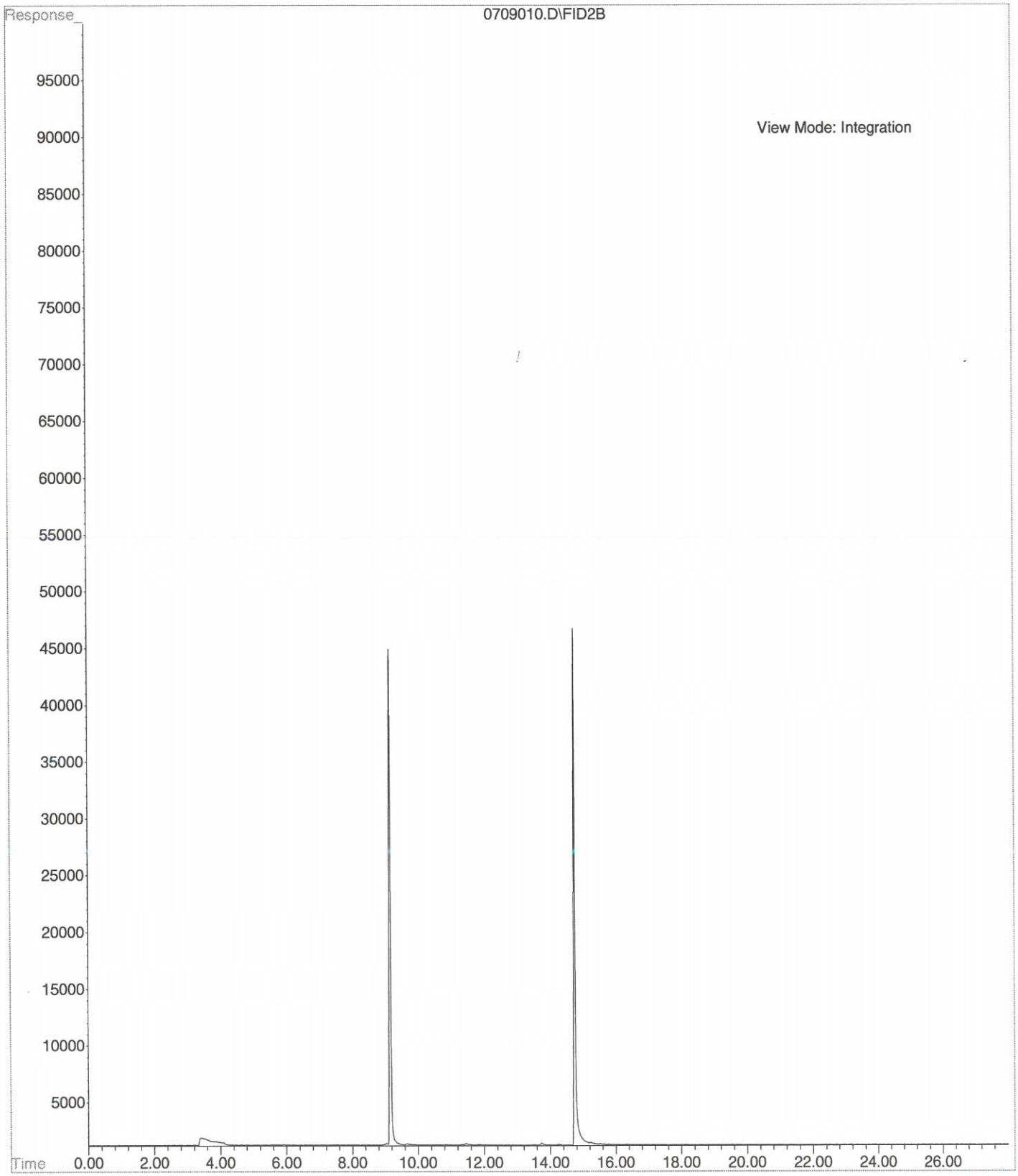
File : X:\BTEX\HOPE\DATA\H150709\0709007.D
Operator :
Acquired : 9 Jul 2015 20:15 using AcqMethod 150701B.M
Instrument : Hope
Sample Name: 07-037-01s
Misc Info : V2-37-21
Vial Number: 7



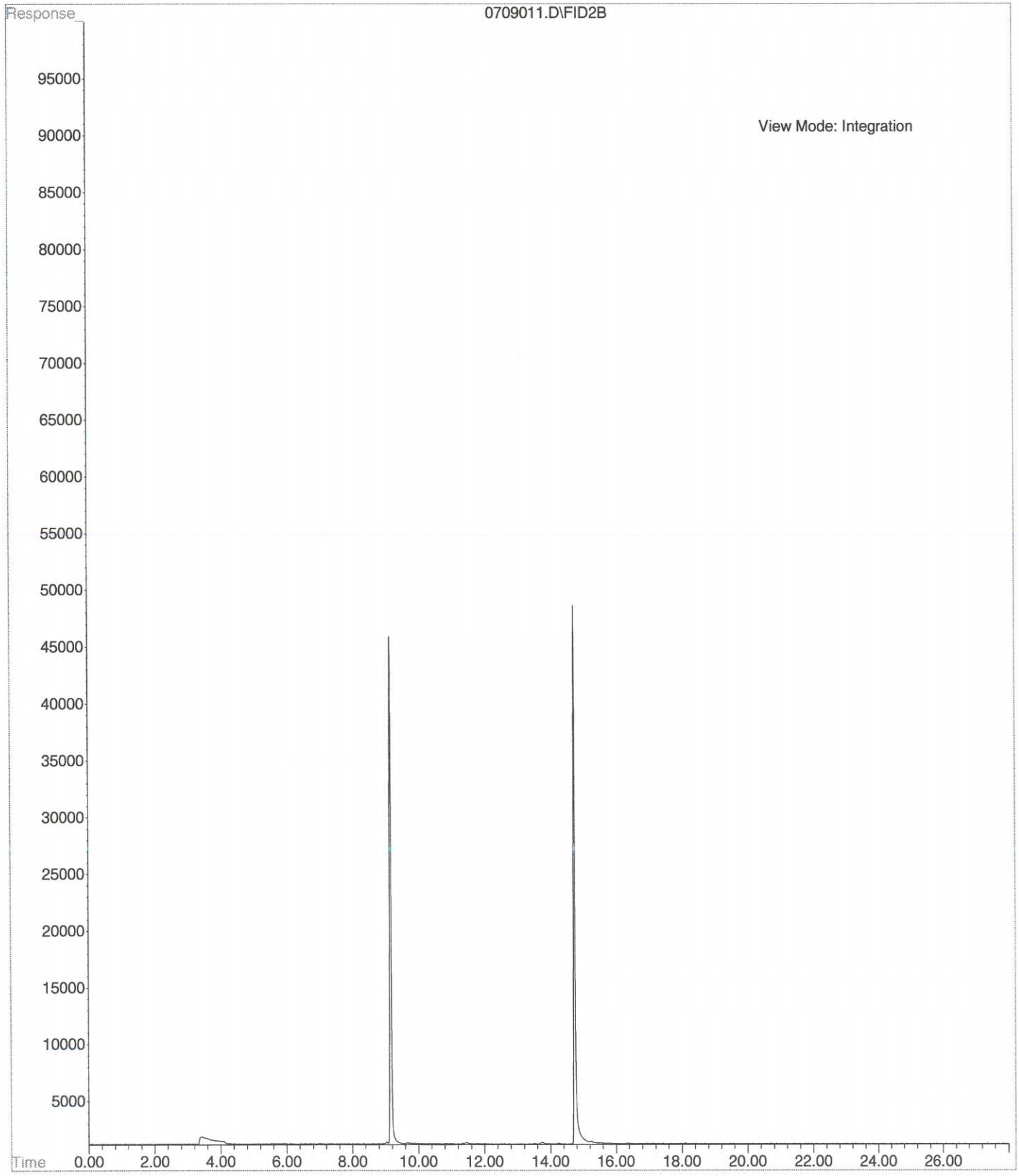
File : X:\BTEX\HOPE\DATA\H150709\0709009.D
Operator :
Acquired : 9 Jul 2015 21:25 using AcqMethod 150701B.M
Instrument : Hope
Sample Name: 07-037-02s
Misc Info : V2-37-21
Vial Number: 9



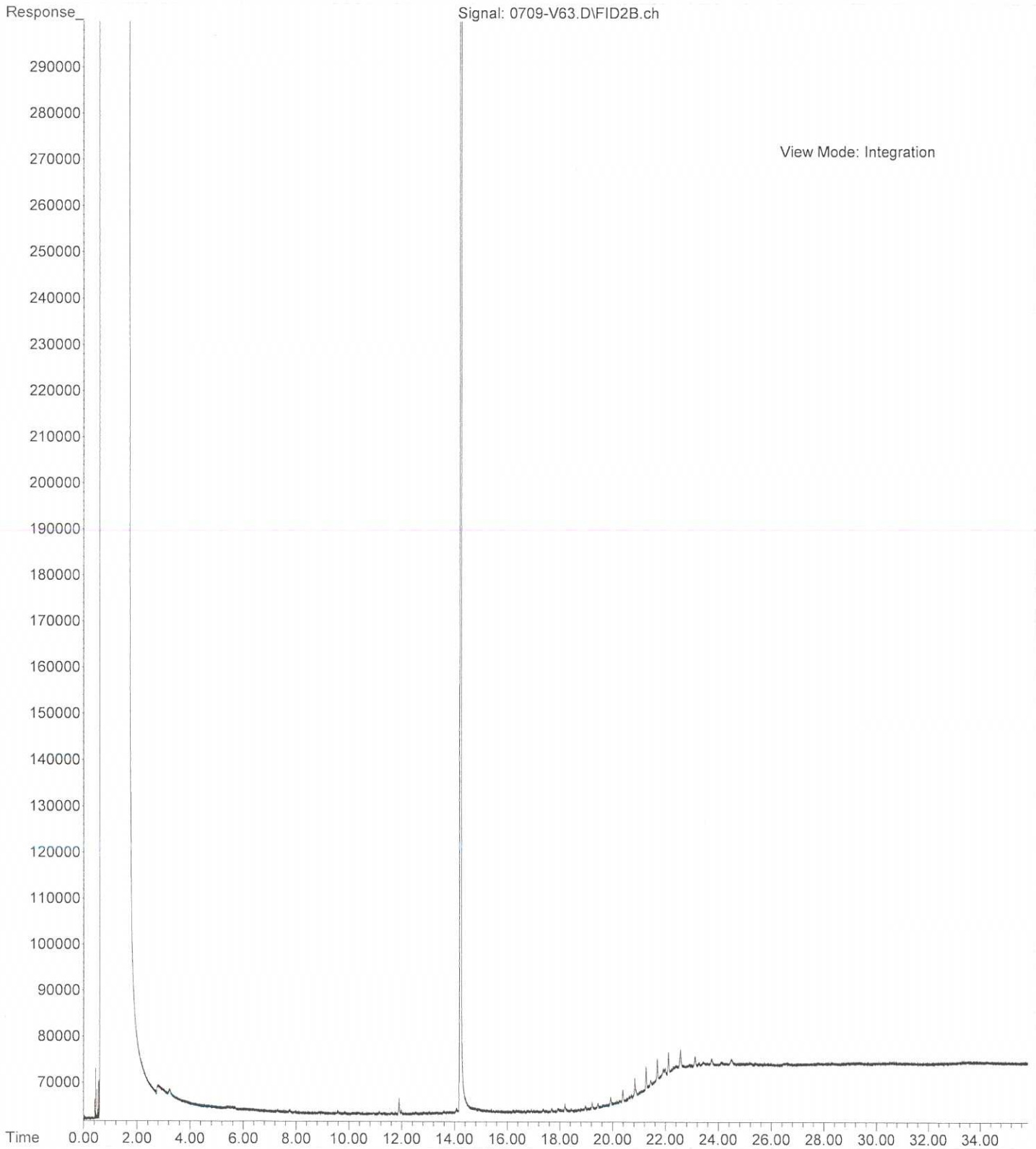
File : X:\BTEX\HOPE\DATA\H150709\0709010.D
Operator :
Acquired : 9 Jul 2015 21:59 using AcqMethod 150701B.M
Instrument : Hope
Sample Name: 07-037-03s
Misc Info : V2-37-21
Vial Number: 10



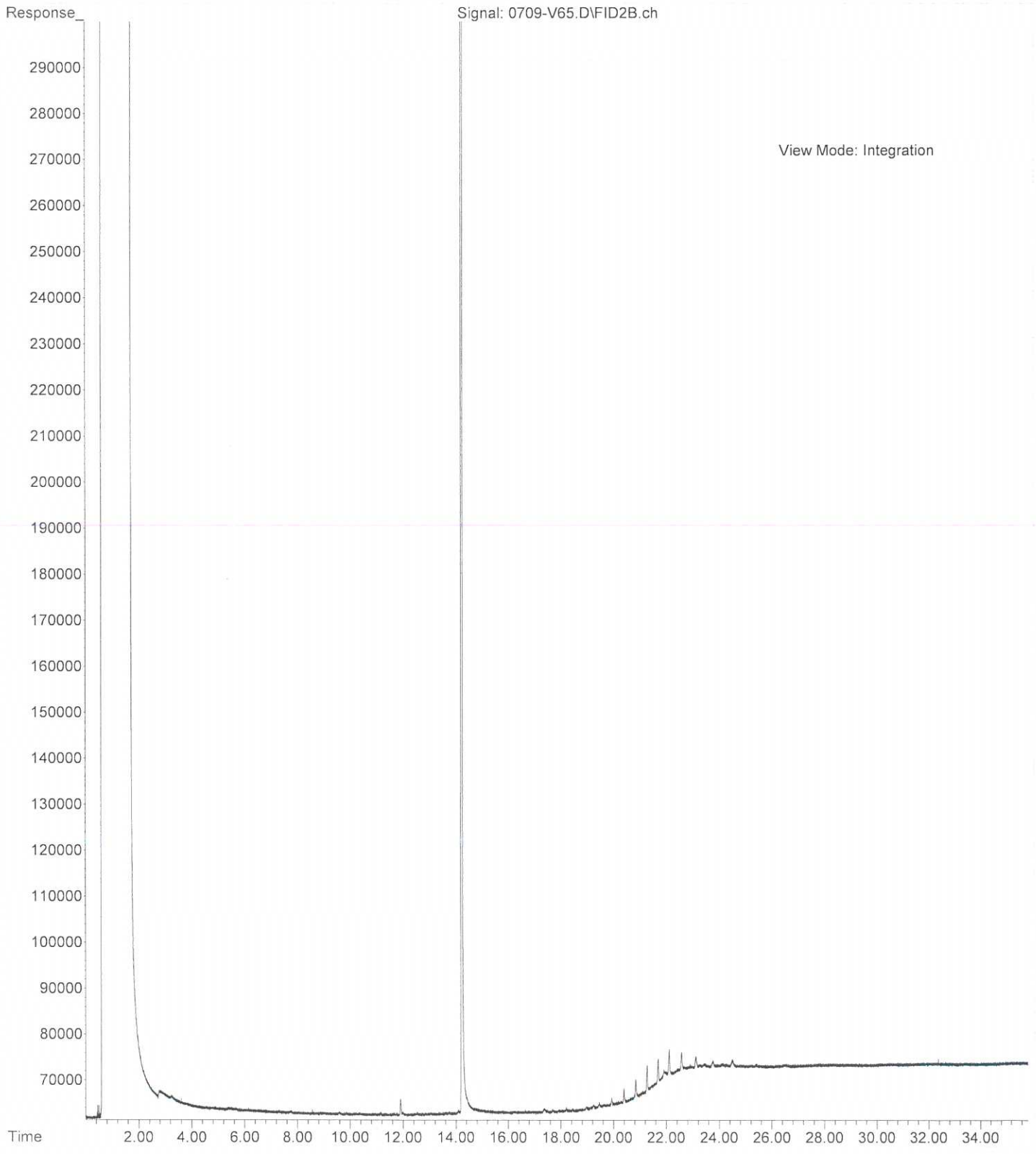
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Acquired : 9 Jul 2015 22:34 using AcqMethod 150701B.M
Instrument : Hope
Sample Name: 07-037-04s
Misc Info : V2-37-21
Vial Number: 11



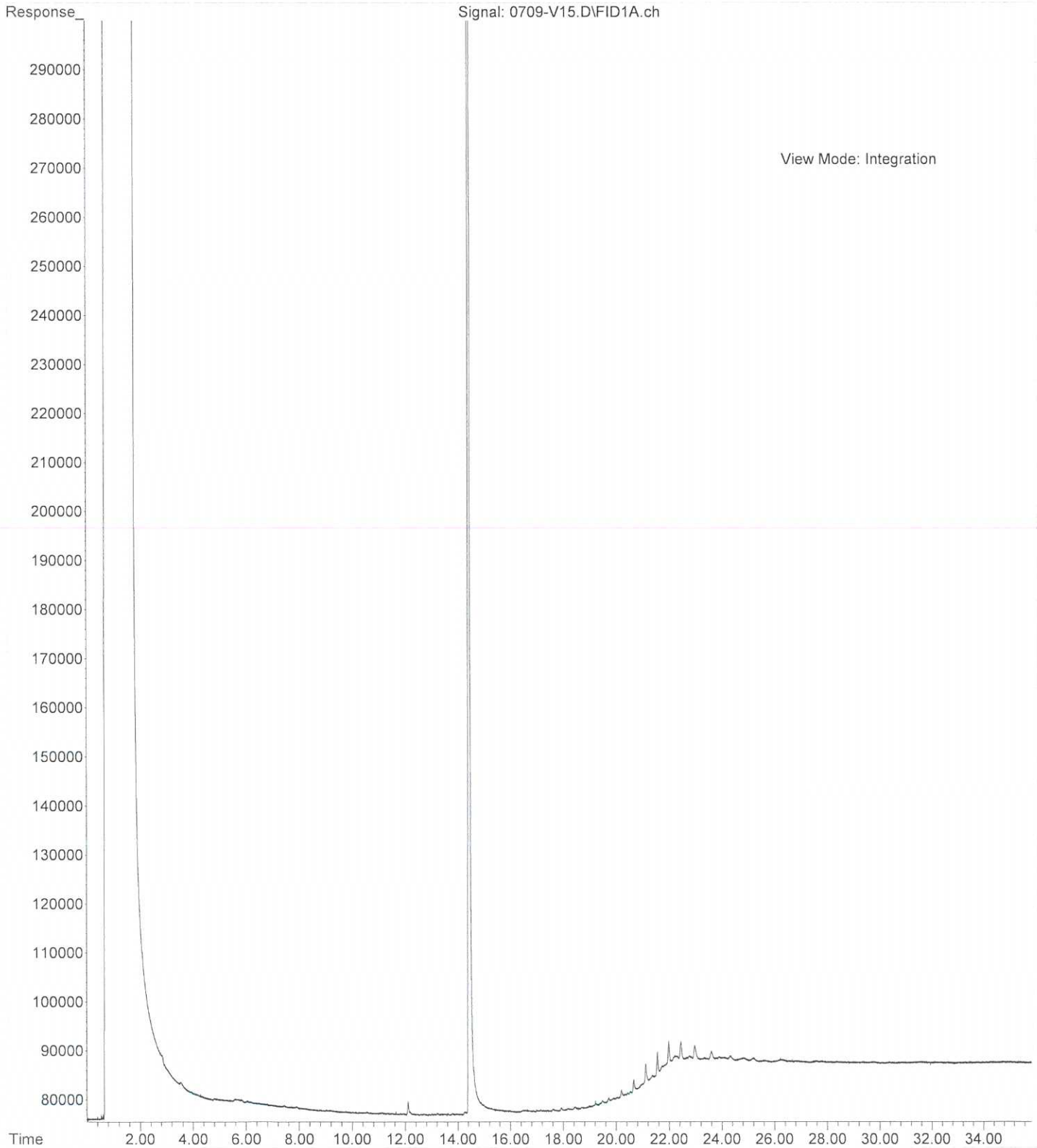
File :X:\DIESELS\VIGO\DATA\V150709.SEC\0709-V63.D
Operator :
Acquired : 9 Jul 2015 19:05 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 07-037-01
Misc Info :
Vial Number: 63



File :X:\DIESELS\VIGO\DATA\V150709.SEC\0709-V65.D
Operator :
Acquired : 9 Jul 2015 20:28 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 07-037-02
Misc Info :
Vial Number: 65



File :X:\DIESELS\VIGO\DATA\V150709\0709-V15.D
Operator :
Acquired : 9 Jul 2015 20:28 using AcqMethod V150209F.M
Instrument : Vigo
Sample Name: 07-037-03
Misc Info :
Vial Number: 15



OnSite Environmental Inc.

14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

July 24, 2015

Fasih Khan
GeoEngineers, Inc.
600 Stewart, Suite 1700
Seattle, WA 98101-1233

Re: Analytical Data for Project 21138-001-03
Laboratory Reference No. 1507-147

Dear Fasih:

Enclosed are the analytical results and associated quality control data for samples submitted on July 17, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 24, 2015
Samples Submitted: July 17, 2015
Laboratory Reference: 1507-147
Project: 21138-001-03

Case Narrative

Samples were collected on July 17, 2015 and received by the laboratory on July 17, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: July 24, 2015
Samples Submitted: July 17, 2015
Laboratory Reference: 1507-147
Project: 21138-001-03

ANALYTICAL REPORT FOR SAMPLES

Client ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
G-1-W-071715	07-147-01	Water	7-17-15	7-17-15	

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Date of Report: July 24, 2015
Samples Submitted: July 17, 2015
Laboratory Reference: 1507-147
Project: 21138-001-03

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**G-1-W-071715**					
Laboratory ID:	07-147-01					
Benzene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
Toluene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
o-Xylene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
Gasoline	**ND**	100	NWTPH-Gx	7-20-15	7-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*95*	*71-113*				

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 24, 2015
Samples Submitted: July 17, 2015
Laboratory Reference: 1507-147
Project: 21138-001-03

NWTPH-Dx

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**G-1-W-071715**					
Laboratory ID:	07-147-01					
Diesel Range Organics	**ND**	0.26	NWTPH-Dx	7-22-15	7-22-15	
Lube Oil Range Organics	**ND**	0.41	NWTPH-Dx	7-22-15	7-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*85*	*50-150*				

This report pertains to the samples analyzed in accordance with the chain of custody,
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Date of Report: July 24, 2015
Samples Submitted: July 17, 2015
Laboratory Reference: 1507-147
Project: 21138-001-03

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0720W1					
Benzene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
Toluene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
o-Xylene	**ND**	1.0	EPA 8021B	7-20-15	7-20-15	
Gasoline	**ND**	100	NWTPH-Gx	7-20-15	7-20-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*100*	*71-113*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-147-01										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Ethyl Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
m,p-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
o-Xylene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Gasoline	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Surrogate:											
Fluorobenzene						*95*	*89*	*71-113*			
MATRIX SPIKES											
Laboratory ID:	07-147-01										
	MS	MSD	MS	MSD		MS	MSD				
Benzene	**55.5**	**55.8**	50.0	50.0	ND	**111**	**112**	82-120	1	14	
Toluene	**53.9**	**54.2**	50.0	50.0	ND	**108**	**108**	83-120	1	14	
Ethyl Benzene	**53.9**	**54.0**	50.0	50.0	ND	**108**	**108**	83-120	0	15	
m,p-Xylene	**53.5**	**54.1**	50.0	50.0	ND	**107**	**108**	81-123	1	15	
o-Xylene	**53.1**	**53.3**	50.0	50.0	ND	**106**	**107**	80-120	0	16	
Surrogate:											
Fluorobenzene						*97*	*96*	*71-113*			

This report pertains to the samples analyzed in accordance with the chain of custody,
and is intended only for the use of the individual or company to whom it is addressed.

Date of Report: July 24, 2015
Samples Submitted: July 17, 2015
Laboratory Reference: 1507-147
Project: 21138-001-03

NWTPH-Dx
QUALITY CONTROL

Matrix: Water
Units: mg/L (ppm)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0722W1					
Diesel Range Organics	**ND**	0.25	NWTPH-Dx	7-22-15	7-22-15	
Lube Oil Range Organics	**ND**	0.40	NWTPH-Dx	7-22-15	7-22-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
o-Terphenyl	*86*	*50-150*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	07-141-02										
	ORIG	DUP									
Diesel Range Organics	**1.55**	**1.34**	NA	NA		NA		NA	15	NA	M
Lube Oil Range	**ND**	**ND**	NA	NA		NA		NA	NA	NA	
Surrogate:											
o-Terphenyl						*87*	*82*	*50-150*			

This report pertains to the samples analyzed in accordance with the chain of custody,
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OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

This report pertains to the samples analyzed in accordance with the chain of custody, and is intended only for the use of the individual or company to whom it is addressed.

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Laboratory Number: 07-147

Company: GEOENGINEERS
Project Number: 21138-001-03
Project Name: 9th & LENORA
Project Manager: FASIH KHAN
Sampled by: FASIH KHAN

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A						% Moisture
1	~~GE1~~ D3 G-1 - W - 071715	7/17/15	1510	W	5		X		X																		

	Signature	Company	Date	Time
Relinquished		GET	7/17/15	1605
Received		GeoEng	7/17/15	1605
Relinquished				
Received				
Relinquished				
Received				

Comments/Special Instructions

Reviewed/Date

Reviewed/Date

Chromatograms with final report ☐

Data Package: Standard ☐ Level III ☐ Level IV ☐

Electronic Data Deliverables (EDDs) ☐ _____

APPENDIX D

Remedial Alternative Scenarios – Cost Estimates, dated December 16, 2015

Table D-1

Cost Estimate - Remedial Alternative 1

Feasibility Study

Ninth Avenue and Lenora Street

Seattle, Washington

ITEM NO.	DESCRIPTION	PLAN QUANTITY	UNIT	UNIT PRICE[1]	COST	NOTE
Design, Permitting, and Administrative Costs						
1	Design and Permitting	1	LS	$0.00	$0	None for Capping
2	Institutional/Engineering Controls	1	LS	$60,000.00	$60,000	Alternative designed to require institutional controls.
				Subtotal	**$60,000**	
Pre-construction Total						
	Total Design, Permitting, and Administrative Costs				$60,000	
	Contingency (Concept design level)	10.0%	%		$6,000	
				Total	**$66,000**	
Construction Total						
	Contractor Overhead (Based on total of construction tasks)	10.00%	%		$0	
	Sales Tax (applied to sum of construction items and construction overhead)	9.8%	%		$0	
	Total Purchase and Installation Subtotal				$0	
	Construction Management and Field Monitoring	10.0%	%		$0	
	Contingency (Concept design level)	20.0%	%		$0	
				Total	**$0**	
Overall Project Total Costs					**$70,000**	

Notes:

[1] Cost Estimates based on 2015 unit prices.

Table D-2

Cost Estimate - Remedial Alternative 2

Feasibility Study

Ninth Avenue and Lenora Street

Seattle, Washington

ITEM NO.	DESCRIPTION	PLAN QUANTITY	UNIT	UNIT PRICE[1]	COST	NOTE
Design, Permitting, and Administrative Costs						
1	Design and Permitting	1	LS	$150,000.00	$150,000	Prepare design, contracting documents, permit applications. Includes contracting and design services to relocated and replace utilities that may be relocated during excavation. Permit reviews with city permit agencies for utility work, shoring and grading. Does not include design or permitting of demolition and reconstruction of structure requiring removal to access contaminated soil.
				Subtotal	**$150,000**	
Mobilization and Site Preparation						
1	Mobilization/Site Controls/Demobilization	1	LS	$50,000.00	$10,000	
2	Erosion control	1	LS	$15,000.00	$5,000	
				Subtotal	**$15,000**	
Soil Removal, Disposal, and Backfill						
3	Characterization of lateral and vertical extents of petroelum plume	1	LS	$200,000.00	$200,000	Hollow Stem Auger drilling to characterize lateral and vertical extents of gasoline-contaminated soil. May take multiple days of drilling due to traffic and work-hour restrictions.
4	Temporary shoring wall to support remedial excavation	6,000	Ft^2	$100.00	$600,000	Temporary vertical shoring wall around remedial excavation area, includes one row of tiebacks. Assumes piles and wall are 200 linear feet and up to 30 feet deep
5	Temporary utility reroute	1	LS	$200,000.00	$200,000	Reroute or support/protect likely utilities (fiberoptic, water, telephone, sewer, steam and gas) during remedial excavation.
6	Excavate MTCA exceeding petroleum contaminated soil under Lenora Street sidewalk and public Alley	600	CY	$40.00	$24,000	Total of all soil excavated. Assume 20% expansion above in-place volume.
7	Gasoline Contaminated Soil (non-haz) Transport and Disposal at approved off-site facility	1,080	TON	$70.00	$75,600	All contaminated soil transport and disposal. Assume 1.8 ton/CY. Cost includes loading and hauling to a non-haz landfill.
8	Purchase, Place and Compact General Backfill Material	2,500	TON	$50.00	$125,000	Assume 1.8 ton/CY. Assume tonnage equal to that of off-site disposal.
				Subtotal	**$1,224,600**	
Pre-construction Total						
	Total Design, Permitting, and Administrative Costs				$150,000	
	Contingency (Concept design level)	20.0%	%		$30,000	
				Total	**$180,000**	
Construction Total						
	Contractor Overhead (Based on total of construction tasks)	10.00%	%		$123,960	
	Sales Tax (applied to sum of construction items and construction over	9.8%	%		$133,629	
	Total Purchase and Installation Subtotal				$1,497,189	
	Construction Management and Field Monitoring	10.0%	%		$149,719	
	Contingency (Concept design level)	25.0%	%		$411,727	
				Total	**$2,058,635**	
Overall Project Total Costs					**$2,240,000**	

Notes:

[1] Cost Estimates based on 2015 unit prices.

Table D-3

Cost Estimate - Remedial Alternative 3

Feasibility Study

Ninth Avenue and Lenora Street

Seattle, Washington

ITEM NO.	DESCRIPTION	PLAN QUANTITY	UNIT	UNIT PRICE[1]	COST	NOTE
Design, Permitting, and Administrative Costs						
1	Design and Permitting	1	LS	$100,000.00	$100,000	Prepare design, contracting documents, permit applications. Includes contracting and design services to relocated and replace utilities that may be exposed and either moved or protected during in-situ remediation methods. Permit reviews with city permit agencies for street use, injections and environmental covenant. Does not include design or permitting of demolition and reconstruction of structure requiring removal to access contaminated soil.
				Subtotal	**$100,000**	
Chemical oxidation in-situ remediation						
2	Performance and Confirmation Drilling Program	5	Ea	$50,000.00	$250,000	Performance samples to analyze the effectiveness of the chem-ox injections and confirmation sampling of soil below MTCA Method A Cleanup Levels. Assumes one phase of site characterization, three rounds of performance characterization and one round of confirmation sampling. Due to access restrictions, drilling may need to occurr over multiple days/nights due to the restrictions of Lenora Street.
3	Protection of in-place utilities from future chem-ox injection chemicals	1	Ea	$150,000.00	$150,000	Evaluate potential chemical oxidation products and their suitability to treat the gasoline plume and not contribute to excessive degradation and decomposition of the utility structures.
4	Chemical oxidation in-situ remediation (injection)	20	Ea	$20,000.00	$400,000	Design, engineer, and complete injection of chemical oxidation (chem-ox) slurry to treat gasoline contamination. Effectiveness of chem-ox injections may be variable because soil is not saturated in water and migration of chem-ox may not be wide-spread to treat large area. Due to access restrictions, drilling/injections may need to occurr over multiple days/nights due to the restrictions of Lenora Street.
				Subtotal	**$800,000**	
Regulatory Closure						
5	Progress reports to document the remedial actions	4	Ea	$25,000.00	$100,000	
6	VCP enrollment, Cleanup Action Report to site closure	1	Ea	$75,000.00	$75,000	
				Subtotal	**$175,000**	
Pre-construction Total						
	Total Design, Permitting, and Administrative Costs				$100,000	
	Contingency (Concept design level)	20.0%	%		$20,000	
				Total	**$120,000**	
Construction Total						
	Contractor Overhead (Based on total of construction tasks)	10.00%	%		$97,500	
	Sales Tax (applied to sum of construction items and construction overhead)	9.8%	%		$105,105	
	Total Purchase and Installation Subtotal				$1,177,605	
	Construction Management and Field Monitoring	10.0%	%		$117,761	
	Contingency (Concept design level)	25.0%	%		$323,841	
				Total	**$1,619,207**	
Overall Project Total Costs					**$1,740,000**	

Notes:

[1] Cost Estimates based on 2015 unit prices.

APPENDIX E
Report Limitations and Guidelines for Use

APPENDIX E
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This Appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of Ninth and Lenora LLC. This report may be provided to regulatory agencies for review. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ninth and Lenora LLC should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report Is Based on a Unique Set of Project-Specific Factors

This report has been prepared for excavation activities at the Ninth and Lenora development project located at 2101 9th Avenue in Seattle, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

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[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

Reliance Conditions for Third Parties

Our report was prepared for the exclusive use of Ninth and Lenora LLC. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with Ninth and Lenora LLC and generally accepted environmental practices in this area at the time this report was prepared.

Environmental Regulations Are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain after Completion of Remedial Activities

Remediation activity completed in a portion of a site cannot wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface

conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Geotechnical, Geologic and Geoenvironmental Reports Should Not Be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If client desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?

Please let us know by visiting **www.geoengineers.com/feedback**.

GeoEngineers